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# ANCIENT EGYPT



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PART I.

## CONTENTS.



1. THE RETURN TO RESEARCH.
2. NILE BOATS. SOMERS CLARKE.
3. THE TREASURE OF ANTINOE. W. M. FLINDERS PETRIE.
4. A MACE HEAD OF HIERAKONPOLIS. M. A. MURRAY.
5. AN EARLY PORTRAIT.
6. GEORGES LEGRAIN. SOMERS CLARKE.
7. REVIEWS.
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# ANCIENT EGYPT

1920.

PART II.

## CONTENTS.



1. A MENTUHETEP STATUE.  
W. M. FLINDERS PETRIE.
2. VARNISHES IN THEBAN TOMBS.  
CAPT. E. MACKAY.
3. THE KINGS OF ETHIOPIA.  
ARRANGED BY DR. REISNER.
4. NILE BOATS (*continued*).  
SOMERS CLARKE.
5. REVIEWS.
6. PERIODICALS.
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1920.

PART III.

## CONTENTS.



1. EXCAVATIONS AT LAHUN.  
W. M. FLINDERS PETRIE.
2. ETHIOPIAN SOVEREIGNS AT MEROE.  
PROF. A. H. SAYCE.
3. NOTES ON JEWELS FROM LAHUN.  
H. E. WINLOCK.
4. GENERAL MAUDE'S PROCLAMATION.  
G. A. WAINWRIGHT.
5. PERIODICAL.
6. NOTE ON EXHIBITION.

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# ANCIENT EGYPT

1920.

PART IV.

## CONTENTS.



1. COPTIC TWISTS AND PLAITS.  
CYRIL BUNT.
2. THE SPHINXES OF TANIS.  
W. M. FLINDERS PETRIE.
3. ALEXANDRIAN WORLD MAPS.  
PROF. W. R. LETHABY.
4. PASSAGES OF ALEppo CITADEL.  
R. ENGELBACH.
5. KHEKER FRIEZES.  
E. MACKAY.
6. REVIEWS.
7. NOTES AND NEWS.

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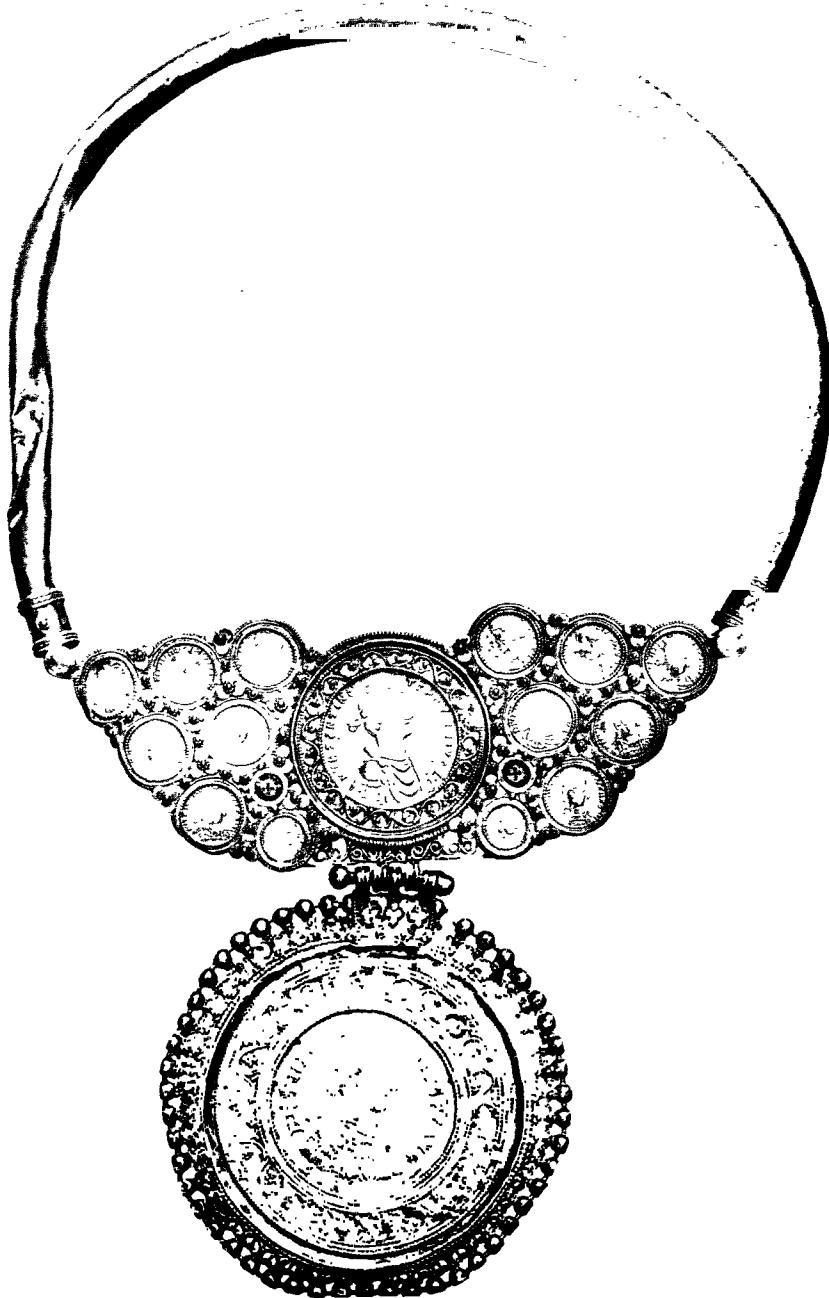
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THE TREASURE OF ANTINOE.



PL. I. GOLD NECKLET ABOUT A.D. 540. SCALE 1,2.

# ANCIENT EGYPT.

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## THE RETURN TO RESEARCH.

AT last it is justifiable again for writers to meet their friends in these pages. Our perils as a nation are by no means over, but they do not need to be met by every kind of energy that was required two years ago, to save our civilisation from the flood of destruction. Great have been the changes since the peace of the world was broken. In Egypt the main actors are gone : Sir Gaston Maspero, his son Jean Maspero, the indefatigable Legrain, worn out prematurely, and the ever-useful Barsanti. With the passing of these the face of affairs is changed. On the English side other losses are felt : Sir Armand Ruffer, Horace Thompson, James Dixon, and K. T. Frost, were all victims of the war, to the loss of Egyptology ; and at home the early death of Prof. Leonard King has left history and archaeology crippled.

The necessary inspection of sites in Syria and Palestine was carried out by two former workers of the British School in Egypt, Capt. Mackay and Capt. Engelbach, under the orders of Field-Marshal Sir Edmund Allenby. This was the first step towards preservation, and their reports give details of the work and restrictions necessary on each site.

The latest School of Archaeology is that for Jerusalem, founded by a joint committee of the Palestine Exploration Fund and the British Academy. Prof. Garstang has actively organised it, Capt. Mackay will be Chief Inspector of Sites, and probably another of our former excavators will be Librarian and Registrar.

The British School in Egypt, with a large staff, hopes to have as full a season of excavation as in the past. In the United States a new basis of work has been started as the Oriental Institute of the University of Chicago, under the efficient management of Prof. Breasted. In his recent address he takes his stand on the importance of all kinds of evidence for history, and places philology in its true position as an interpreter of some evidence of historic times, but only thus touching a brief part of man's past. The whole evidences of the past are to be the care of the new Oriental Institute, which thus comes in line with what has always been the system of the British School in Egypt.

With much regret it is found that the present costs of production, being about doubled, must make some difference to the issue of this Journal. At the present time it is unreasonable to expect anyone to pay more to meet the cost, and therefore some reduction in pages and illustration is necessary. So soon as our readers will expand the circulation to its former extent, the previous scale of issue will be resumed. The summarising of what has been published abroad during the war is the prime requirement to place readers in touch with present conditions. The reviews will therefore be fully carried on in this and following numbers.

## NILE BOATS AND OTHER MATTERS.

WE have been told many times how unchanging is the East, and undoubtedly at the root of things there is but little change ; but the statement must be taken with considerable reserve. In many directions things go on in Egypt even as they did in the times of the Pharaohs, in others fresh fashions are eagerly sought after, fresh methods succeed one another with considerable rapidity.

We have but to compare the appearance of Cairo to-day, with its aspect as shown to us in the drawings of David Roberts, Prisse d'Avennes, and others, to see that, except in the eastern quarters of the city where some of the older streets are yet untouched, the changes are radical.

Glass windows have chased away the beautiful *Mushrabiya*; the picturesque open shop front is dying in all directions ; nor does the change stop here.

The old style of costume so pleasant to see, so well suited to the climate, so easy to keep clean, has almost disappeared. The Egyptian of all classes is now ashamed to admit that he belongs to this wonderful old country ; he will not appear in the old style ; he must ape the ugly, inconvenient and dirty European coat, trousers, starched collars and uncomfortable hat.

The changes have of late become so rapid, that photographs of street scenes taken but twenty years since, show a crowd quite differently dressed from that which we see to-day.

To give some particulars of changes in the region of fashion and clothes. Within the last twenty-four years I have observed considerable variation to take place in, for example, the material of which the *qallabiah*, the universal garb of the *fellaheen* must be made. This convenient and comely garment, of cotton, was usually dyed either of a light blue tint or of a blue so dark as to pass for black. The native term for the light blue tint is " *labany*." " *Laban* " is the Arabic for milk. We may suppose that the Egyptian saw in the colour of the blue dye something suggesting the colour of milk, but I venture on this speculation not without fear.

The cotton was usually dyed locally. It took but a few months to make a change. That mean looking stuff glazed calico was introduced ; in this material all new *qallabiah*s must be made : the shining surface, which soon wore off, immensely pleasing the purchaser.

In the course of a few years there came another change, which spread through the country as quickly as the preceding had done.

Although the shape of the garment was retained, fashion decreed that the stuff of which it must be made must be of a material so " dressed " on its surface as, when it was new, to look not unlike silk.

Head-gear also underwent a variation. The soft and charming white of the turban (*'Emma*) was voted old fashioned, next time it was washed its colour

was sadly changed by an overdose of "washing blue"; indeed all white garments were, and are, spoiled by this nasty stuff. Another thing. It is the mark of distinction in these days to wear boots or shoes, no matter how burst, split or disreputable they may be. Socks, or the relics of them, are very essential to a complete effect.

Cast-off European clothes have had a deplorable influence, especially since the war began. The King's livery is everywhere dragged in the mire.

Egypt does not possess a long list of native musical instruments, but the list has now been increased by one. The Scotch bagpipes have been enthusiastically welcomed by the native population, and are on sale in Cairo.

We now come to sailing boats, especially those of small size.

The old latine rig is passing away; the lugger takes its place; just as many years since the latine sail displaced the horizontal yard and square sail.

Before we touch upon the build of the boats we may be permitted to say a few words on the rig.

There is not any need in this Journal to do more than refer to the numerous sculptured representations and models of ancient Nile boats, which show us the square sail stretched between upper and lower horizontal yards.

At what period did this type of sail disappear?

The earliest observation which I have been able to find, by a European writer, relating to types of rig, is by De Lannoy. *A Survey of Egypt and Syria undertaken in the Year 1422 by Sir Gilbert de Lannoy, Knt., from a manuscript in the Bodleian Library at Oxford*, by the Rev. John Webb, M.A., F.S.A. (*Archaeologia*, XXI, 281)

De Lannoy states:—

"Item. Y'a sur ceste rivière tout du pay's du soudan une si tres grosse quantité de barkes alaut de lun a lautre en marchandise qui s'appellent germes<sup>1</sup> les aucunes et le plus avoiles latine et les autres voiles quares."

Perhaps some reader of this paper may know of a writer more ancient than de Lannoy from whom we may gather some statement about the rig of boats on the Nile, but it is the habit of most travellers to leave such details out of account, overlooking the fact that what is commonplace to-day, becomes more or less of ancient history in a very few years.

My search has been for illustrated books, as in them I felt I should find my best chance of information. The earliest book I have met with is Pocock—*A Description of the East and some other Countries*. Vol. the first. "Observations on Egypt," by Richard Pocock, LL.D., F.R.S. London, 1743."

On Pl. VIII is a representation of a boat with three masts, the mainmast a little the tallest. Across this, part of the way up, swings a yard. From the way it is canted one may suppose that the yard carried a triangular and not a square sail. The other masts are without yards or indications of sails.

Pocock does not give any other representation of a boat.

On p. 69 he tells us as follows: "The large boats called marshes, such as we embarked on, have a mast about the middle, and another towards the prow." We are not much the wiser for this as he tells us nothing about the sails. The next book I know of is by Norden, a Dane, who was sent out by the French Government in 1737. He died at Paris in 1742.

<sup>1</sup> This name for a cargo boat was in use in the time of Curzon, 1838. See *Monasteries of the Levant*, p. 18, 3rd Edition, 1850.

The book (I quote from the second edition, Paris, Didot, 1795, in three volumes) is well supplied with engraved views, in which the Nile is frequently depicted with many boats thereon. There is always difficulty in estimating the value of the evidence given by engraved plates. In many, if not most, cases the travellers knew but little how to draw; this is notably the case with regard to Pocock. The traveller had, at any rate, seen the objects. The engraver, on the other hand, had no knowledge whatever of the original; but he did his best to "invest with artistic merit" the clumsy handiwork of the author.

Scenes in Egypt were tricked out with European adornments. Uncertain indeed may be the value, as evidence, of an engraving that has been thus produced, and yet it may be better than nothing or than the foggy smears which are now so usually printed as photographs.

In the case of the engravings in Norden's book we find the Nile dotted with boats of an extremely European rig. Many boats carry the latine sails, but on the same plates, as for example Pls. XXXVI, LII, LIII, LXXII, etc., we find boats of a considerable size with a very tall mainmast carrying two square sails, one above the other, on horizontal yards; a mizenmast with one square sail and a bowsprit with a horizontal yard and a sail on it. As we look through the plates we come to that numbered CXXXVI—a view of Philae (also called Heiff). On this plate we see the horizontal yard and square sail, also the horizontal yard on the bowsprit. It seems very improbable that a boat with such a heavy top rig was hauled, standing, up the cataract. All further plates of places in Nubia south of Philae show boats with latine sails.

Are we to conclude from what is above stated that there were square rigged boats in use on the Nile and at a date as late as Norden so far up the river as the First Cataract, or may we assume that the engraver had enlivened Norden's drawings with a marine type of square rigged boat which was not really to be seen in Egypt?

In 1780 C. S. Sonnini brought to a conclusion certain travels in Egypt which he undertook at the instance of the French Government. An illustrated translation of his travels was published in England in 1800. Boats are to be seen in several of the engravings in this book, always with latine sails.

Then follows Denon, who accompanied the French expedition, and published a book of travels. This was issued several years before the monumental *Description de l'Égypte* appeared. Denon was a draughtsman by no means dependent on the engraver. Not a single horizontal yard is seen in the engravings in his book. This type of yard seems completely to have disappeared by the year 1798, the date at which, with the years 1799 and 1800, the materials for the *Description de l'Égypte* were being collected by the French savants.

It is easy to observe that in many engravings in this great work some very indifferent drawings have been largely "made up" by the engravers, but however that may be, square rigged boats are not represented.

If we consult Gau (published in 1822), a book in which are beautiful and scrupulously careful engravings, evidently prepared under the author's eye from admirable drawings, very few boats are seen, none of them square rigged.

Few men were more observant than Edward William Lane, who in the year 1826 ascended the Nile to the Second Cataract, and afterwards published that delightful book *Manners and Customs of the Modern Egyptians*. In Chapter XIV, "Industries," he refers to the navigation of the Nile, and tells us that the boats have two large triangular sails.

Many of Lane's drawings are preserved at the British Museum, amongst them those made during his voyage up the Nile. I admit that I have not studied them with a view to the methods of rigging boats, but am disposed to believe that had there been horizontal yards depicted, my attention would have been arrested.

On the exterior of the little temple of Rameses II which lies in the desert east of the great walls at El-Kab may be seen, perfectly well-preserved, incised drawings of boats with horizontal yards.

I am not able to recall any other place where I have found this type of rig depicted as a mere rough drawing. It is evidently an ancient piece of work. Scratchings of boats with latine rig are sufficiently common, but they are undoubtedly more modern than the drawing first described.

Mr. Quibell tells me that at the monastery of S. Jeremias at Saqqara he found a rude painting of a ship with three masts and horizontal yards. This painting he attributes to the sixth century A.D.

Sir Gardiner Wilkinson gives a drawing of a sailing boat which he names "cangia." This was evidently a near relation to the dahabeah of to-day with its latine rig.<sup>1</sup>

I am much indebted to my friend Mr. G. Walter Grabham, of the Sudan Geological Service, for notes he has collected during his extensive travels on the Blue and White Niles,—notes as careful as they are accurate, and relating to the types and names of the types of boats he has found in these distant places. Of the "gyassa," which we see so commonly on the Nile as far as Halfa, built with ribs and planked, he says: "Of this type of Egyptian cargo boat few are seen higher up the river than Berber, most of them apparently belong to the Government. The type is essentially exotic." It is probable that these boats are the relics of the Gordon expedition, 1884.

He then speaks of the "naggr," the common type of native-built boat, ribless and with a width of beam often approximating to half its length. The bottom curved, the sides continuing the same curve. These boats range in size from small feluccas to large craft, such as can carry 500 ardebs.

"The naggr type of boat was evidently in use in the times of the old Government, as shown by pictures in the later books of travel, but I have been unable to find pictures or descriptions of any boats in the early books at my disposal. With the establishment of the Egyptian *régime* the need for river carriage must have increased, and we know that travellers and goods generally came by boat from Berber to Khartum.

"It was only after 1840 that traffic arose on the White Nile. At present (1917) we find the largest boat owners at Omdurman, and their craft are sailed up either the White Nile or the Blue, according to season and demand.

"Kawa and Shawal are important centres on the White Nile from which boats ply up the river. Considerable numbers are to be seen as far as the mouth of the Sobat, and a few penetrate the lower part of the Zeraf. The 'sunt' wood of which the naggr is made, grows on sandy soil in damp situations. On the White Nile sunt is not met with beyond Kosti, but on the Blue it is found as far up as Roseires, and that is the limit of navigation. It also grows near the river north of Khartum. At present the main centre of boat building is certainly

<sup>1</sup> Manners and customs of the ancient Egyptians. New edition by Sam. Birch, Vol. II, Murray, 1878.

Omdurman, and, for this purpose, the wood is chiefly obtained from the large forests between Dueim and Kosti.

“ The naggrs are Arab-owned craft, and are the only kind of boats used by the inhabitants for carrying merchandise.

“ The Nilotic negroid tribes use canoes for ferry and fishing purposes. The Shilluk on the White Nile possess rather large built canoes which are put together somewhat after the style of the naggr, but by means of rope. They have a rising bow and stern like the gondola, and a V-shaped section, save that the point of the V is cut off leaving a narrow flat bottom.

“ These built canoes are only met with on the White Nile ; not on the swift waters of the Bahr el-Jebel. The Shilluks also make use of the hollowed tree-trunk, which is almost the only type found amongst the Dinkas, Bari, Madi, Alur, etc., who inhabit the river banks as far as Lake Albert.”

Mr. Grabham calls my attention to a book by Legh, *Legh's Journey in Egypt*, second edition, 1817. He was travelling on the Nile in 1812-13 and remarks that there are three kinds of boats used in the navigation of the Nile. He hires a “ maish ” at Rosetta to convey him up the river (p. 15). This boat is large enough to take Legh, Smelt and their servants, also three British officers. They were nine days from Rosetta to Cairo.

Legh also mentions a “ djerm ” (p. 14). This has two masts, but not a cabin ; it is chiefly used for the conveyance of merchandise.

He also refers to the “ cangia,” which he describes as having but one mast, but from eight to fourteen oars and two cabins.

Mr. Grabham tells me that he heard the term “ maish ” used by the Reis for the capacious barge attached to the steamer side on his journey to Roseires. None of the boats here referred to, bear square sails.

Must we not conclude that several centuries back the square sail began to yield to the triangular ?

At the present day we see evidences of an important change. About twelve years ago a few private sailing boats made their appearance in Cairo, lugger rigged and provided with a centre board. Some were soon to be seen at Aswân. In the secluded regions of Wadi Halfa a similar type of boat and rig appeared. The type was found where groups of British officials were stationed. The “ lines ” of the boats were quite different from those of the clumsy craft which then, and now, are produced and reproduced, as they probably have been for centuries by native hands. The new type was by the natives called “ London,” which we may take as a compliment. At Aswân there has grown up quite a profitable business in building boats on these improved lines, with centre boards and lugger rig. None of these boats are of sunt. All are with ribs. The old “ felucca ” has in many parts of the river almost given place, for light work, to the new “ London ” ; the improvement is so manifest that even the conservative Egyptian bows before it and adopts it. So far as I have been able to observe no boat carrying cargo has yet been built in the new mode. Having raised the question, but failed to trace the time or manner of disappearance of the old square rig, let us go back to a type of boat still built and very largely used, but which belongs to remote ages of antiquity ; a boat nearly as primitive as that described by Herodotus, if not in many essentials the same.

This type of boat is called a “ naggr.”

We see but few specimens of the class until we have ascended the Nile as far as Asyût, but from that place southward it is met with very frequently and

in the Sudan is far more common than boats of any other type. It may be known by its exceedingly ancient appearance, its rotundity and clumsiness of form, the slowness of progress, the absence of ribs in its construction, and the fact that it is never tarred or painted, the wood soon acquires a silver grey tone which adds very much to the appearance of age.

A more unmanageable, primitive contrivance than the naggr, except it moves right before the wind, cannot be imagined. As an example, I have, in Sudan, been half an hour crossing the stream with a favourable N.W. wind to a spot but a little above the starting point. I have been four hours getting back and yet the current was with us and the ever-blowing N.W. wind by no means violent.

Before describing how the naggr is built I will give a few words to the two most ancient boats that now exist in Egypt, to be seen in the Museum at Cairo. It will be appreciated that the naggr is a very direct descendant of the boats of the XIIth dynasty. These boats were found at Dahshûr by M. de Morgan during his excavations in 1894-5.<sup>1</sup>

The boats, on their arrival at the Museum (then at Gîza), were a good deal repaired, and like so many repairs carried on then and now in that institution they incline very much in the direction of skilful forgeries.

It is indeed most important in a museum that any object standing in need of repair should be so treated that the student can tell at a glance what is original and what is new. No register exists telling us what was the actual condition of the objects we are considering, when they were found, or what has been done to them by way of repairs.

When these ancient boats were in the Museum at Gîza I made some careful notes (in 1894); they had then but just arrived and were in a good light. At Cairo they are unfortunately very much in the dark. It is now exceedingly difficult to distinguish new pieces of wood from the original. The hopes I had entertained (in 1916) of correcting my studies of 1894 have come to little. The passage of twenty-two years has made a considerable difference in the colour and surface of the inserted pieces, which now approximate pretty closely to the colour of the old.

The two boats are so nearly alike in all respects that it is sufficient to describe one of them.

As the section shows, Fig. 1, they are built entirely without ribs.

The two boats are described in the official catalogue, but the measured drawings which accompany the description have been so reduced in the printing as to lose much of their value.

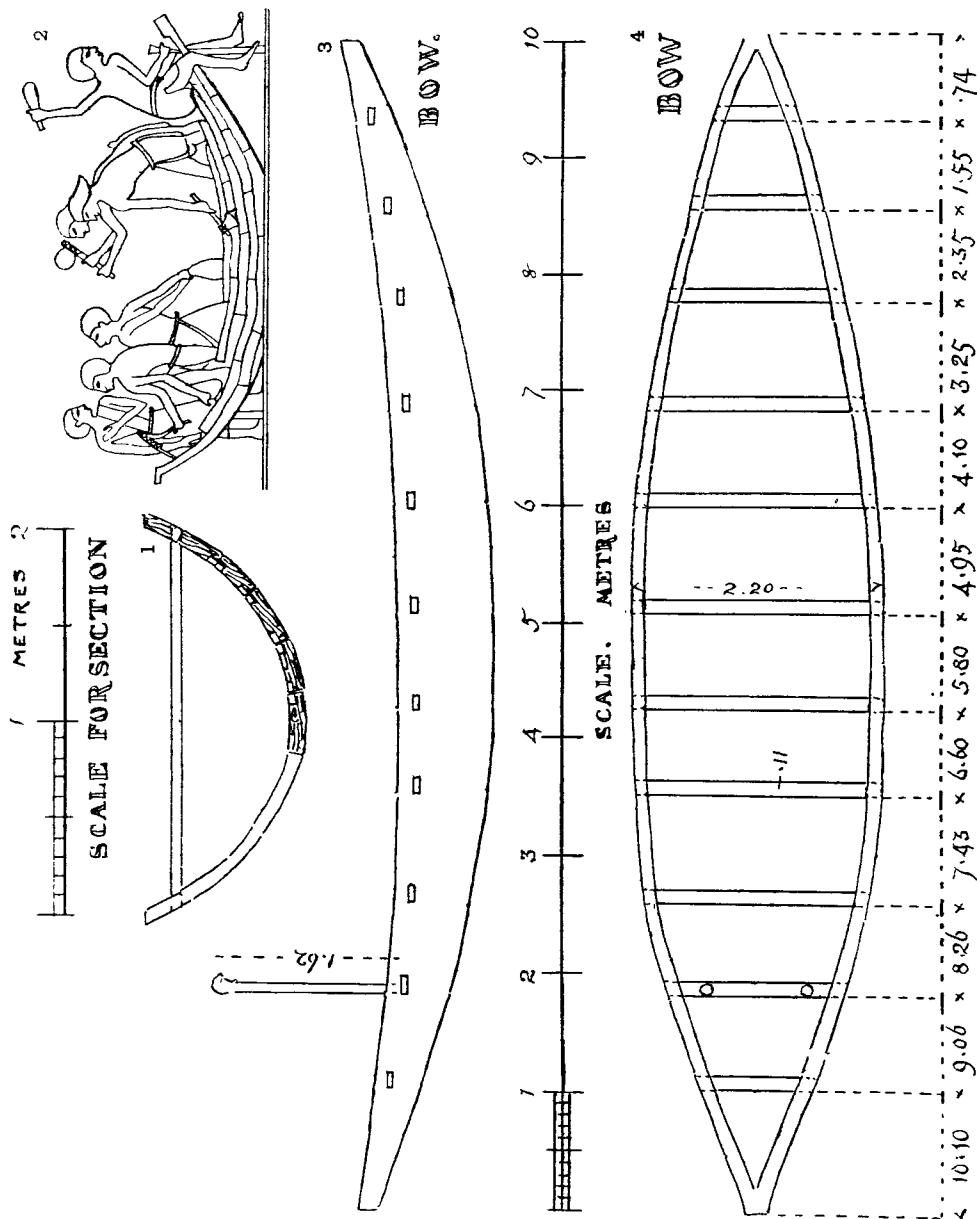
Certain of the terms made use of in the description are, no doubt, correct in the United States, but the words have not similar values in England. It is unfortunate that this is so, or that equivalents are not given by Dr. Reisner, than whom a more patient and painstaking archaeologist cannot be found. We will, however, go back to more ancient times than those of the Museum Catalogue, and see what evidence we can find from tomb drawings.

In Lepsius' *Denkmäler*, II, 126, is found a drawing from the tomb of Khnum-hetep. In this the building of a boat is shown in progress. Fig. 2.

We see clearly that the sides are made of short pieces of wood, set together, breaking joint (like bricks), as described by Herodotus. At least one of the

<sup>1</sup> Fouilles à Dahchour, Mars-Juin, 1894. By J. de Morgan. Vienne, 1895.

workmen is shown standing inside the boat. If this boat had been built with an inner frame of vertical ribs we should have seen them standing up above the planks, and to them we should have seen the workmen attaching the outside skin of planks ; but nothing of this sort is visible. The planks are shown one lying above the other exactly as in the Museum boats, or as, in building a naggr, we see done at this day. One workman holds an adze. Others have hatchets. The



implements bulbous at the end are mallets ; the way in which they are held suggests that use.

The tomb of Khnumhetep is of the reign of Senusert II, so that we have before us a well-developed picture of boat-building in the XIIth dynasty.

As the very unwieldy Catalogues of the Cairo Museum are not often to be met with, I will venture to give a short, but by no means as complete,

a description of the boats, as Dr. Reisner has done. I also give measured drawings; a plan with a longitudinal elevation and transverse section. (Figs. 1, 3, 4.) The transverse section, Fig. 1, shows clearly how the boat is built up of planks, and without a keel. The two boats are not exactly of the same dimensions, the planks forming the hull of the larger boat average 9 cm. in thickness; the planks of the smaller, 7 cm.

The planks vary both in length and in width, but are wide as compared with those we should use to-day in building boats of the size of those in the Museum.

The middle bottom plank which takes the place of the keel is 25 cm. in width,<sup>1</sup> those immediately adjoining are of the same width. The total length of the boat is 10.10 m.

We now come to consider the method of construction.

The planks vary a good deal in their length. In all cases the sides and ends of the planks butt against each other without any overlap. See the section Fig. 1, and the drawing from Beni Hasan, Fig. 2. The boats are, in fact, as we call the method to-day "carvel built." The Beni Hasan drawing indicates very well the Egyptian peculiarity that the sides of the planks are not parallel one to the other, but undulate according to the configuration of the grain of the natural wood. A lower plank having been set in the place the plank which rests upon it has its lower side cut into undulations to fit. In masonry likewise the irregular thickness of courses was adjusted by letting one into another.

The boat builders never placed vertical butting joints one over the other, and with good reason, for there not being any internal ribs the stability of the hull rests entirely on the success with which they accomplished their aim of making a continuous skin, each part supporting and supported by the parts adjoining.

<sup>1</sup> Why, in the Museum Catalogue, the middle plank is called a "beam" is hard to say.

SOMERS CLARKE.

(*To be continued.*)

## THE TREASURE OF ANTINOE.

SOME ten years ago a hoard of personal ornaments was found in Upper Egypt ; the more likely report is that they were in the ruin of a monastery at Antinoe. That city was undoubtedly a wealthy centre of foreign influence, and a monastery was the safest place during the Arab invasion, which closely followed on the making of this group ; so the probabilities are in favour of this report. For the present, at all events, the name of the Treasure of Antinoe is the best that we can give to this hoard. It suffered the fate of most finds of valuables in the present state of the law ; it was violently broken up among the finders, they sold it surreptitiously to dealers, it was bought up in scattered lots by private collectors, and it is now separated in London, Berlin, Detroit and the Pierpont Morgan collection. The archaeological value of the hoard has been much weakened by the admixture of objects from other sources, so that there is no certainty as to what was found together.

Under these disastrous results of Government control, which destroys more than it preserves, the best course was to have the material all published together. Thanks to the labour of the late Prof. Walter Dennison of Swarthmore College, Pennsylvania, this was successfully done ; but most unhappily his death in 1917 frustrated his seeing the issue of his work. It is a sad loss for archaeology, that a man who might have done much to develop our knowledge, was cut off at the age of forty-eight. The volume on *A Gold Treasure of the Late-Roman Period in Egypt* (85 pp., 54 plates, 57 figures, Macmillan, \$2.50) is his best memorial, and will give his name immortality on the shelves of museums and scholars. Besides the full illustration, sometimes on an enlarged scale, of all the objects of the hoard, many similar pieces already known are also illustrated to serve for comparison. The author generously gave permission for reproducing the main results in *Ancient Egypt*.

Before describing the objects that probably belong together, we may note what should be excluded. The greater part of the articles are dated by coins to the time between Justinian and Mauricius Tiberius, the latter half of the sixth century, or else are of similar work and age. Dr. Dennison agrees that two necklaces (8, 9) are from another source, probably of the second and early in the third century, and he puts as possibly earlier a pair of spiral serpent bracelets (24, 25), which seem obviously of the first century, or earlier still. With these we may set aside a pair of armlets (21, 22), the shell pattern on which is probably of the second century (see the necklace and gold ring in *Heliopolis*, XXXIX), also a pair of bracelets with a wavy vine stem for the elastic circle (32, 33), which can hardly be dated after the third century. After excluding these we can only say of the remaining bulk that there is nothing against their having been buried together before the sack in the Arab invasion of 641.

The whole hoard contained, then, two necklets with groups of coins attached, three gold coins set in linked framing, five necklaces or collars, a long chain for the body, six pairs and one odd bracelet, a small cross and a crystal figure. The



PL. II. HALF OF GOLD COLLAR OF LINKED PLATES. FULL SIZE



absolute dating by the attached coins is only in the two necklets and the linked coins. In these three cases, the earliest date for the making of the jewellery is under Justinian (528-556) for one necklet and the coins, and under Mauricius (582-602) for the other necklet, which is obviously of later and more debased work. As it is unlikely that such wealth of gold would be displayed after the Arab conquest of 641, the limits of date are fairly close. To this we refer later.

The finest object for display is the great necklet (Pl. I here) with fourteen inserted coins from Theodosius to Justinian, a pendant medallion of Theodosius, and a barbaric imitation of a gold coin of Valentinian III as a centre piece. This taste for making imitations of coins for ornament is very familiar in the North of Europe (see Montelius, *Civilisation of Sweden*, Fig. 134, copy of Theodosius; Worsaae, *Pre-History of the North*, Figs. 6-16). Some other features are also alike in Northern work and Romano-Egyptian, as the crystal fibulae and garnet inlays, and large discs of ornament on necklets. These are northern in origin, and probably all this class of ornament was brought into Egyptian use by the bands of northern troops in the Roman garrisons.

A fellow necklet, copied from the previous about fifty years later, has coins ranging from Justinian to Mauricius, and therefore after 582. The middle piece is a struck medallion more intelligently made than the previous imitation of a coin, as it has a rational Greek inscription, "Lord, succour the wearer," alike on both sides. The pendant, however, seems to have been an entirely independent work, converted to a pectoral, and too large for the necklet. It has on one side the Annunciation, and on the other the Conversion of water into wine; the style is distinctly early Christian rather than classical.

A pleasing detail in these pectorals, which seems to be post-classical, is the filling up of spaces with the small three-petal flowers, like arrow-head or water plantain (see Fig. 22 here).

The three linked solidi of Justinian have borders cast around the coins, apparently by *cire perdue*; inscriptions were then punched on a band of the border. These are Greek, and read "For He shall give His angels charge over thee"; next, "to keep thee in all thy ways"; thirdly, "Emmanuel which, being interpreted, is God with us." These, as well as the medallion in the pectoral, are therefore prophylactic charms, to protect the wearer.

The necklaces are very varied. No. 10 is of small balls linked together, with fifteen crosses each of four pearl and sapphire beads. No. 11 of eight lengths of woven wire chain alternating with beads, and a large circular openwork pendant, with four interior circles forming a cross. No. 12 has alternate stones with the ugly late device of beads threaded on a wire around; but the other alternatives are six-leaved rosettes in circles, of the fresh geometrical style which arose on the ruins of classical work. No. 13 is a common form of wire links with beads, and a row of bead dangles. No. 14 is a remarkable wide collar, passing round three quarters of the neck, of eleven open-work gold plates hinged together, with seventeen sapphire pendants (see Pl. II). The plates are in pairs, on opposite sides, there being six different designs. The patterns are good, descended from Greek palmetto and foliage, but the whole effect is far too stiff and awkward for wearing.

The large body chain is very unusual, and the most satisfactory and original design in the whole hoard (see Pl. III). It consists of two large open-work discs, one worn on the chest, the other on the back, as shown on terracotta figures. These were joined by a chain of small discs over each shoulder, and a chain round each side, twenty-three small discs in each chain. There are only two patterns

for the discs, but the whole effect is varied, and the two designs look quite distinct, yet harmonious. The use of such a body chain was probably to retain ample flowing robes near the body, and prevent the garment bagging out awkwardly.

There are three pairs of earrings, all of which have long dangles of beads, a style probably coming from the North with the barbaric invasions.

Two pairs of bracelets have elaborately pierced openwork discs. These are ingenious in design, reminding us of the marble-work screens of San Clemente, or the rather later ones of Saint Mark's. All of this style seems to be the result of the northern introduction of wicker-work screens, which belonged to nomadic life. Another pair of bracelets, or rather armlets, are made of hollow hexagonal tube, notched to imitate banding, and with two imitations of aurei of Honorius at the fastening. A single bracelet is of twisted wire pattern, with a fulsome bezel of thirteen set stones.

This gold work from Egypt, and other examples that Prof. Dennison has published for comparison, supply a good basis for dating details of ornament. The employment of gold coins set in later framings serves to give an anterior limit of date for the work, and it is unlikely that the posterior limit is more than two or three generations later. The mixture of coins of various ages in the large breast ornaments shows how far such material precedes the ornamental setting. In one group, Pl. VIII, the coins are—two of Theodosius I, two of Theodosius II, five of Anthemius, one of Basilicus, and four of Justinian, or between about A.D. 390 and 530. In another group, Pl. XIV, there is one of Justinian, five of Justin II, one of Tiberius II, six of Mauricius, or between about A.D. 550 and 600. Thus, in one case, half the coins are within sixty years, in the other case half are of the last two reigns, or a very few years. Thus on the average the age of coins when used was less than half a century. This gives ground for dating jewellery by single coins to within half a century in most cases.

The elements of the ornament are here separated, and classed by their motives (Figs. 1-22). Thus the degradation of design is shown, and this will help in dating other jewellery. The dates placed after the emperor's name are the earliest to which the work would be reasonably assigned, allowing a few years for coins to circulate into the provinces. The date of the ornament is therefore to be taken as probably within fifty years after the dates here given. Different dates are given for Nos. 6 and 19, according to the age of the head of Justinian on the coin.

The foliage work of Nos. 1, 2 and 3 is obviously like that of the first century architecture debased, such as on the great Altar of Peace. This foliage work is familiar on the sculpture of the Severan age. No. 3 seems to be the back of an openwork design like No. 2; but, judging from the photograph, Nos. 1 and 2 are of wirework on a sheet-metal basis. In No. 4, perhaps a generation later, the foliage work has lost its tradition and become irregular and senseless. The revival of openwork about A.D. 600, No. 5, was on an entirely different system, cut out of a continuous sheet instead of being built up of soldered wire.

The foliage, or running vine, pattern in Nos. 6 and 7 is made of detached curved wires soldered on to a sheet-metal basis. In A.D. 530 they still had a binding put across to hide the junction; but by 600 A.D. the separate wires are stuck down, detached and unashamed. The old sense of structure was lost, but this may have been due to a workman below the average of his generation. Small neat scrolls, to fill up spaces, are also of Justinian (No. 8).

The row of pelta-shaped objects which form a border under Caracalla

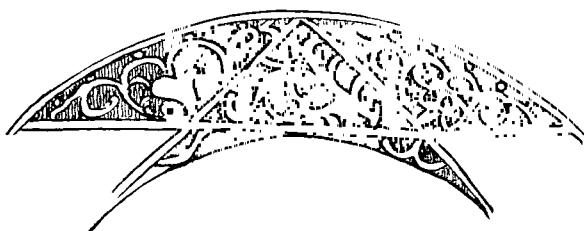
(Nos. 9 and 10), seem to have originated a favourite device of the sixth century. On No. 10 the dotted lines are placed to suggest how the designer came to regard the pattern, and from this to make it in wirework, with a pile of globules up the middle to stiffen it, as in Nos. 11 and 12. It was simplified, as wire on a sheet-metal basis (No. 13), under Focas (Univ. Coll.), and this element is common on earrings and small work of that age.



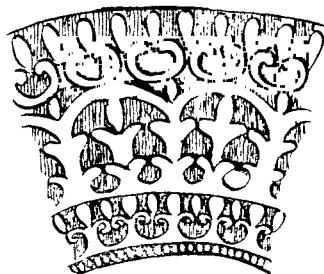
CARACALLA

1-3

220 A. D.

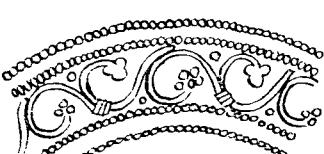


SEVERUS ALEXANDER 240 A.D.

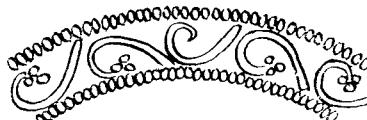


MAURICIUS 600 A.D.

4, 5



JUSTINIAN 530



MAURICIUS 600



JUSTINIAN

6-8



CARACALLA 220



JUSTINIAN 550

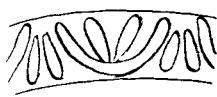
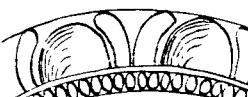


MAURICIUS



FOCAS 610

9-13

240  
SEV ALEXANDER350  
CONSTANTIUS II430  
HONORIUS350  
CONST. II380  
VALENS

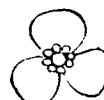
14-18



JUSTINIAN I



550 A. D.



19-22

J U S T I N I A N I 550 A. D.

A border of flowers, No. 14, was copied very formally under Alexander. By the time of Constantius II the flower forms are scarcely recognisable (No. 15). Under Honorius the flower is reduced to two lobes, with a concave hollow between ; this might, perhaps, be a degradation of the Greek dart-and-egg. Similar

concave hollows in a row are used for a border (No. 17) under Constantius II, and are modified to a zigzag line pattern (No. 18) under Valens.

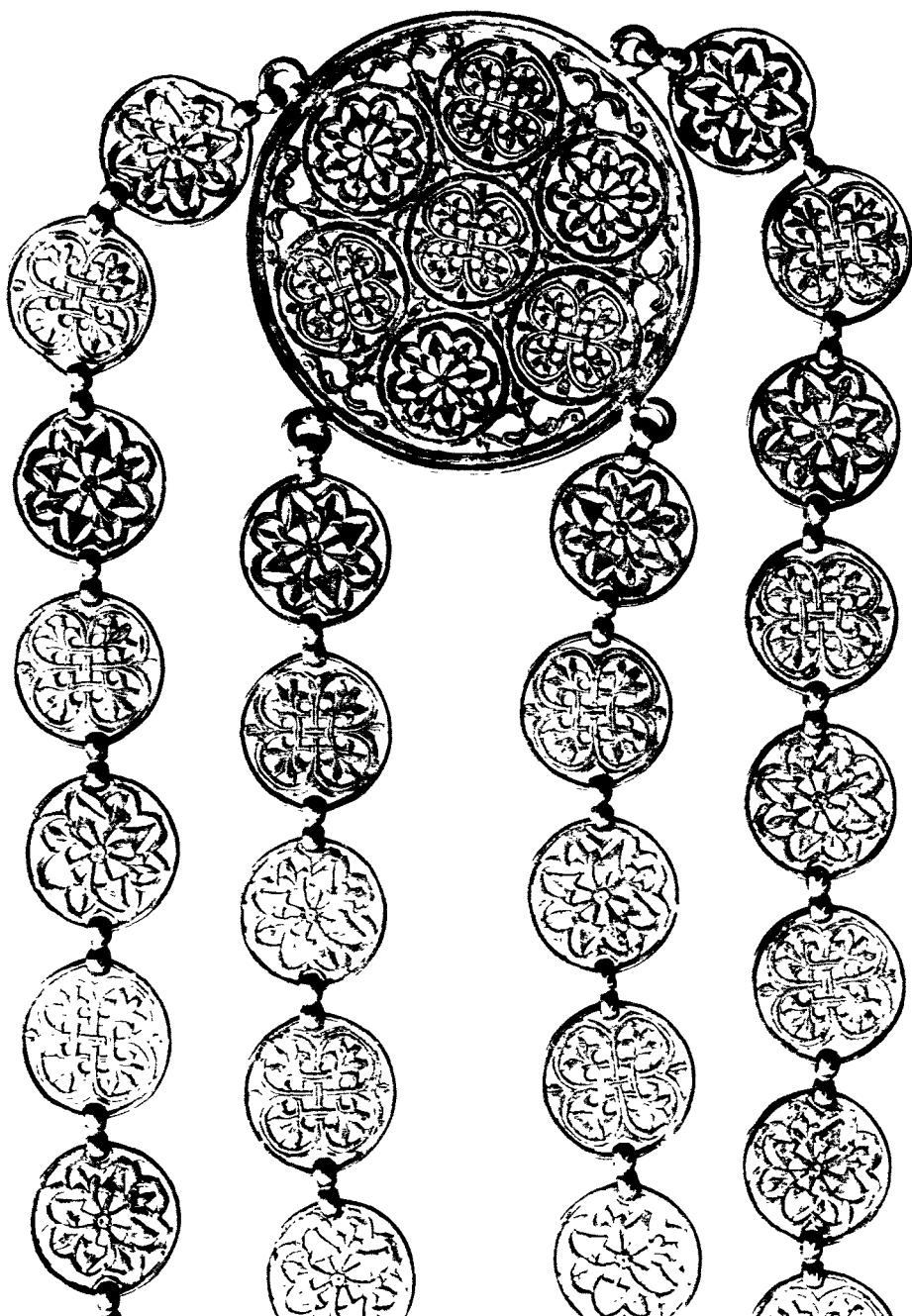
The continuous scroll was carelessly made in several modifications all at the same time ; in fact, on small work it is difficult to settle which form is used, as it varies so much according to the lighting. In No. 19 the scrolls are clear, in No. 20 they become a running line, in No. 21 they form a series of pendant curls. The little flower, No. 22, was a favourite and graceful mode of covering up junctions and filling small spaces of ground.

Whenever it may be possible to put together all the dated examples of jewellery, and to analyse the different elements, we shall be able to recover more of the stages of change in the various patterns. This will serve later to fix the greater part of jewellery which has no self-evident dating.

A curious figure in rock crystal, nearly four inches high, is supposed to have come from the hoard. It is a female figure, dressed in chiton and peplos swathing the whole person : round her neck is a high band. The aspect is Christian rather than classic. It is on a silver gilt base that has been broken from a larger object. This obviously is not an empress or a person of pretensions. The meek aspect, almost deferential, rather suggests it is intended for a saint, so it might have been the crowning figure of a reliquary. The rage for relics in the fourth to the sixth century would make it quite likely that a reliquary might be hidden along with other treasures in the seventh century.

The fate of all valuable antiquities under the present law is a melancholy one. The Egyptian Government claims to have seized two great groups of silver work at Zagazig, though even from these some pieces went astray. But the present hoard of Antinoe, the great group of gold medallions from Abukir, the large gold hawk from Dendereh, the great find of a royal burial of the XVIIIth dynasty with much gold work, and innumerable lesser discoveries, have all been lost to the Government, and many lost to all knowledge by being melted up, owing to the fear of Government claims. This suicidal policy, which is a loss of values to the Government, is also an irreparable loss to archaeology. If the Government would give local values for everything, such as a dealer pays, the whole would be secured at a small part of the full European value. The confidence of the people should be gained by a liberal payment for everything that is declared at once, and seizure should be the penalty for concealment and not declaring any discoveries. If the Government had to pay out £10,000 in a year they would make a large profit on the result ; the more they paid the larger the gain, which would otherwise fall to the dealers. Let us hope that Palestine and Mesopotamia will not be mismanaged in the shortsighted way that prevails under the English and the Egyptian laws.

W. M. FLINDERS PETRIE.



PL. III. GOLD BODY-CHAIN OF 2 LARGE AND 92 SMALL DISCS. SCALE 5 6.



## THE FIRST MACE-HEAD OF HIERAKONPOLIS.

THE great carved mace-heads of Hierakonpolis have been the subject of much careful study, especially in the case of the second and third, which are now in the Ashmolean Museum, Oxford. The first has received less attention, owing to its damaged condition. It is broken into several pieces, but though a great deal has been preserved, the surface of the stone is corroded in many places, and flakes have split off, so that much of the sculpture is irretrievably lost. The sculpture thus left falls into three groups, of which two are on the largest fragment.

1. The first group represents the king who wears the crown of Lower Egypt and is wrapped in a cloak or shawl ; one hand appears to project, and to hold a whip. He is beardless and is seated on a throne, but the sculpture is so worn away that only the square box-like lines of the back of the throne are visible. The figure is placed under a curved canopy supported at the front by two slender shafts ; on each shaft there is an ornament immediately under the canopy, and each shaft terminates in a sharp point. Both the canopy and the figure of the king are of the same type as on the second mace. It is interesting to note that on the maces the king when wearing the crown of Lower Egypt is represented as being smaller, both actually and in proportion, than when wearing the White Crown. On the third mace-head the Scorpion King is considerably larger than the figures among whom he stands ; while on the first and second maces the figure of the king is actually smaller than the others ; this is markedly the case in the mace-head under discussion. This disproportion in size is against the usual rule of Egyptian art, which makes the principal person larger than the other figures in a scene. A possible explanation is that these are representations of the king's statue, and not of the king himself. As the figure is placed under a canopy of the type of the early shrines, and is dressed in the close-wrapped garment peculiar to Osiris, it may represent the dead and deified king to whom his people are paying homage.

2. On the same fragment as the king's figure, but removed from it by a wide space, originally sculptured and now blank, is a figure of a pig-tailed man. Only the back of the head and the back of one leg are visible, the rest being utterly destroyed. Immediately above the head is a curved rope, and above that again is an object of which so little remains that it is impossible even to guess at what it was intended to represent. Behind the rope and almost touching it is a rectangular object, apparently the ground or base of other figures or objects ; these would be on a level with the king's face. The figure stands on another peculiar and indeterminate object ; the angle of the leg suggests that the man is running or dancing. Two points in this figure are noticeable : the first is the pigtail, which I will discuss below ; the second is the size. It is the largest figure on any of the maces ; and if the canon of Egyptian art held good at that early period this should be the principal personage in the scene. Taken together with the object on which he stands, and the object above his head, he fills the whole height of the mace-head. The size of this figure should be compared with the bearers of offerings, and especially with the king.

3. Three or four fragments joined together give part of a scene of bearers of

offerings. These fragments come from the middle and lower part of one side of the mace, but unfortunately do not join the main piece anywhere. The scene is divided horizontally into two registers, in each of which there are the remains of three figures. In the upper register, one leg and arm only remain of the first man ; he is dressed apparently in a short kilt and carries a fox-skin (?) in his hand. The second and third figures have skirts to the middle of the calf, the skirt being ornamented either with patterns or with rope-work. There are indications of some object suspended from the hand of the third figure.

In the lower register, there is practically nothing remaining of the first figure except the back of the head and the plaited pigtail. The second man is, however, almost complete. He wears a short beard, apparently fastened to the hair, which is arranged in a heavy mass at the back of the neck while the upper part is plaited into a short pigtail. His dress consists of a short kilt from the waist to above the knee, fastened at the waist with a narrow band ; down the front is an ornamented piece which may perhaps be a piece of pleated cloth such as occurs on the loin-cloths of the late Old Kingdom. In his right hand he holds a barrel-shaped vase of the type of the second Prehistoric Period, a form which approximates very closely to the heart-sign of the later hieroglyphs. The left arm with the fist clenched is raised above the head. The legs and feet are bare, and one knee is raised as though in the act of dancing. The third man differs from the second only in attitude ; in his right hand he holds a fox skin (?) already conventionalised in form, the left arm hangs at his side. The right knee is raised above the level of the waist as if in an active dance. Again these figures are all considerably larger than the king. Below their feet is a curved line, apparently a rope.

Pigtailed figures are rare in Egypt, and even among those known two types of pig-tails are discernible. The first type is when the hair is gathered into a thick twist or plait just above or below the nape of the neck (*Hierakopolis*, I, Pl. XI, *Abydos*, II, Pl. IV). In these cases the hair covers the curve of the back of the head and neck. In the second type, the pigtail starts at the crown of the head, as amongst the Chinesé, and is apparently plaited with some stiffening material as it falls quite clear of the head and neck. When the hair is dressed in this fashion it is sometimes all gathered into the plait as in Figs. 2 and 7, leaving the nape bare, this may perhaps be caused by shaving the back of the head under the plait ; in other cases, as in Figs. 3 and 8, the hair falls in a heavy mass under the pigtail, which is plaited only from the hair of the upper part of the head. Pigtails of any sort appear to occur only in the beginning of the historic period, and at no other time. The only exception is perhaps the *nms* headdress of the king (Fig. 9), where, however, the pigtail is obviously made of cloth and not of hair.

From the comparative size of the figures, it is evident that they were of more importance than the king. The type of face is not that of the aborigines as, shown in the slate palettes. Not only is the hair differently dressed but these people are clothed, sometimes in a short kilt, sometimes in a long robe, whereas the aborigines are either very scantily clothed or quite nude. The long-robed people are never represented as prisoners : on the contrary, the battlefield palette shows a captive aborigine being driven forward by a person whose garment reaches to his ankles. The short kilt and the artificial beard suggest the royal costume, so also perhaps does the pigtail. If then, the royal figure is that of the dead and deified king, are these the competitors for the throne ?



Thothmes III

Prof. Newberry has pointed out that this is probably the meaning of the scene on the mace-head of Narmer, and that it is there complicated by the presence of the heiress to the throne, by marriage with whom the successful candidate legitimised his claim. Another possibility may be kept in mind, that the piece with the king (1, 2) did not belong to the same mace-head as piece 3.

M. A. MURRAY.

## AN EARLY PORTRAIT.

AMONG the antiquities in the New York Historical Society's collection there are some so unusual that Mrs. Grant Williams has kindly allowed us to reproduce them here. These and many other objects have been published by her in the *Quarterly Bulletin* of the New York Historical Society in the last two years. A very remarkable portrait head is that of Smenkhu-ptah, who had the "good name" of Atu-shep-er-onkh. His tomb is known at Saqqarah, from which the sculptures have come: it is dated to the end of the Vth or early in the VIth dynasty. The type is so far from that of the usual Egyptian that we have more certainty in its being a careful portrait. The detail of the profile differs from the usual type in the sharp brow, the pointed nose, the long upper lip, the sharp edges of the mouth, and the retreating chin. The form of the nose is closely like that of the wife of Ka-aper; but the heavy, morose, face is not like any other.

A remarkable coffin-box in the same collection has in it two wooden ushabtis, one wrapped, and a roll of inscribed linen, probably part of the Book of the Dead. These, and a scarab, being all bedded in pitch, are not modern insertions. The style of the ushabtis is of the early XIXth dynasty; the name is unusual, Sebaur. The burial of two ushabtis in a coffin descends from the belief of the XVIIIth dynasty, when the ushabti was a figure of the deceased person. Yet this burial must be just after that time, as one of these is an overseer with whip, and the other is plain, showing that the serf idea of the XIXth dynasty had by this time come in.

W. M. F. P.

## • GEORGES LEGRAIN.

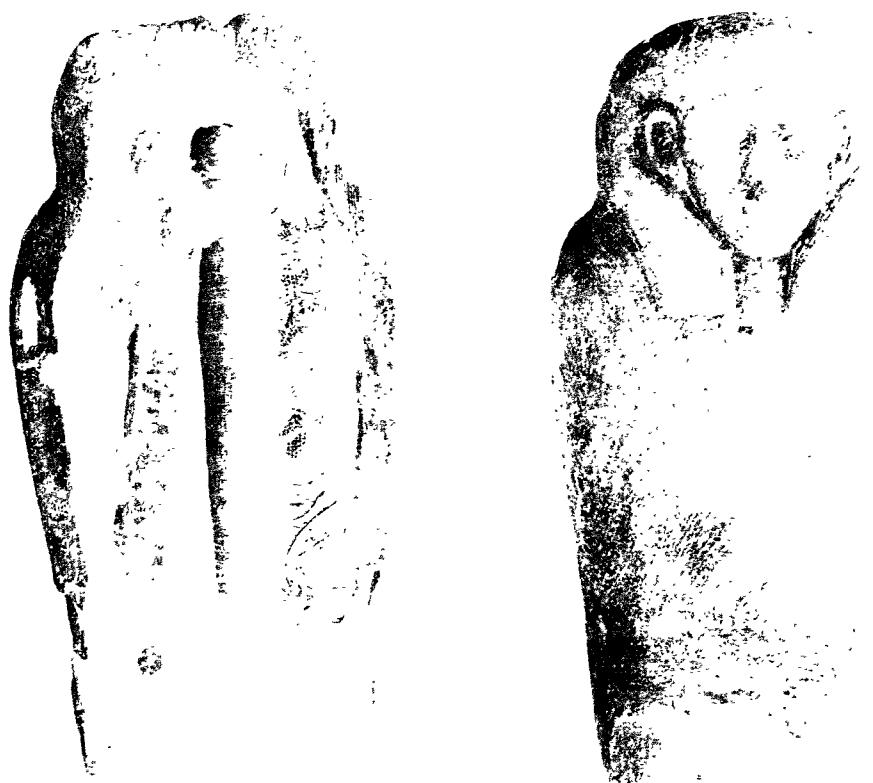
THE following notes upon the really remarkable work carried out by the late Georges Legrain at Karnak, are offered as a tribute to his memory. Unless there be set forth a description with some amount of detail, it is difficult for his ungrudging labours to be at all estimated. Let us consider what was the condition of the immense agglomeration of ruins of which he was put in charge in 1894.

Quite twenty years before that time Mariette had removed great masses of earth, with the object of general investigation, and the recovery of the buried plan. A plan was afterwards published, and if it has proved very incorrect in many respects, that is hardly to be wondered at. The undertaking was one greater than Mariette, over-burdened as he was, had either time or means to carry through.

M. Jacques de Morgan was appointed Director-General of Antiquities in 1893. He decided that a systematic investigation of Karnak should be made; and in 1894 he nominated Georges Legrain to preside over that work. Legrain then made a programme of what to do and how to do it, which has proved really remarkable for its foresightedness. He did not approach the subject only from the side of the excavator, and of one who had to repair and maintain as he went



PORTRAIT OF SMENKHU-PTAH. Vth DYNASTY



COFFIN-BOX WITH USHABTIS.

along. He realised the impossibility of one man seeing through to the end so immense an undertaking. He saw that he must thoroughly register the progress of the works and the objects found, so that his notes and observations could be taken up by those who followed, and thereby the history of this prodigious place could be properly built up. He viewed Karnak as a vast historical monument. He set to work so to arrange the system for tabulating the immense series of inscriptions and sculptures, that a complete record of the whole group of temples could be published.

Legrain was but twenty-six years of age when he was appointed. His methods have proved perfectly sound after twenty-three years' progress.

The works went on increasing very greatly in volume and in interest.

From an engineering point of view the risks were often great, but such was the forethought and care taken, there was, I believe, never an accident, although there were workers by the hundred, and immense blocks of stone to be moved, taken down and reinstated, some of them weighing more than 25 tons apiece.

M. Maspero, succeeding De Morgan, was unhappily very unsympathetic with Legrain. Here lay in fact the "opposition and difficulties" referred to in the short notice of Legrain already published, *ANCIENT EGYPT*, 1917, p. 142. But Maspero is dead and cannot defend himself. It would therefore be undesirable to say more. What is past is past.

It is a thing not a little to be deplored that of all the work that has been done at Karnak since the year 1894, of all the remarkable discoveries that have been made, no consistent or scientific account has ever been published.

There exist a few notes and records buried in the *Annales du Service des Antiquités*. These, a few pages at a time, are scattered about in the aforesaid *Annales* extending from the year 1900 to 1914. If we wish to study a plan of Karnak we must turn to that published by Mariette as long since as 1875, and now completely out of date.

We must not suppose that the Department of Antiquities had been idle all this time. Partly volumes on Saqqarah, Lower Nubia, *Les Temples Immergés de la Nubie*, with many plans, photographs and much documentary evidence, had been published—the materials for several volumes on Karnak were at hand, but Karnak was kept in the shade.

The reader must be left to draw his own conclusions upon this curious state of things above mentioned.

SOMERS CLARKE.

## REVIEWS.

*The Empire of the Amorites.*—ALBERT A. CLAY. Sm. 4to. 192 pp. (Yale University Press.) Milford, London, 1919.

As to the term “empire” for the dominion of the Amorites, different opinions may be felt, but a mere question of a term must not hinder our acceptance of the facts. The broad position is that Semite names are as early as Sumerian in Babylonia, and that the fertile Syro-Babylonian region was far more likely to be the home of a race than Arabia, which is a semi-desert: it is, therefore, likely that the Semite centre was in Northern Syria rather than in Arabia.

As to the prominence of Semites in early Babylonia, more than a hundred thousand personal names are known, and in the early part of this material many of the rulers’ names are Semitic, and the names of the antediluvian kings in Berossos are Semitic. Further, the elements in these early names, Abu, Akhu, Ammi, are Western Semitic rather than Arabian. Another evidence is from the figures of the Sumerian gods who are hairy and bearded, as Semites, and not like the shaven Sumerians, pointing to the Sumerians having taken over the earlier Semitic gods of the land. So far as opinions go, Brünnow thought the Semites to be the original Euphrateans and the Sumerians to be invaders: Meyer holds that the Semites were there before the Sumerians settled in South Babylonia and drove the Semites northward. Jastrow says “The mixture of Sumerians and Semites was so pronounced, even in the oldest period revealed by the documents at our command, that a differentiation between the Semitic and non-Semitic ideas in the conceptions formed of the gods is not generally possible.”

That this Semitic influence belonged to Syria and not to Arabia is shown by the elements of the names, stated above, and by the name Abram, or Abraham, which is not found in Arabian inscriptions, but is known in the Euphratean tablets. The Cappadocian tablets are naturally North Semitic in names and gods, and not Arabian. The view that successive waves of emigration had flowed from Arabia is discussed. The distinction should be drawn, however, between movements of people from a half-desert land as it dries up, and movements because of a pressure of population in a fertile land. The desert land will have but few people to pour out, they will be hardy but not strong, they will scarcely overcome a full population in a fertile land. The Islamic conquest of Egypt was by only 12,000 or 20,000 men; they succeeded not because they were strong, but because Egypt and the Roman provinces generally were miserably weak, drained by taxation for centuries, harried by the Persian war, and preferring liberty under Arabs to taxation under Romans. This success must not be taken as a type of all emigrants from Arabia. Dr. Clay well maintains that the reason of the civilisation being more primitive in Arabia than in other Semitic lands, does not imply that Arabia was the source, but that it was isolated as a backwater, and so retained early ideas and forms less changed than in lands subject to other influences.

The question of the Khabiri is noticed, with the fairly conclusive fact that at Boghaz-koi there is a list of gods called the "Gods of the Khabiri." The conclusion is that they cannot be Hebrews, but were related to the Hittites, if not Aramaeans. We may also notice that in the Amarna letters the Khabiri invade Damascus and Ashtaroth, that is, they move east of Jordan, opposite to Galilee. It seems at least possible, therefore, that they were at some time east of Judaea, and gave the name to the mountains of 'Abarim. If the *cheth* of Khabiri may represent the initial *ayin* of Hebrew, it may equally represent that of 'Abarim.

The limits of Amurru in 1100 were on the Mediterranean, as Tiglath Pileser I sailed in ships of Arvad upon "the great sea of Amurru." Asshur-nazir-pal (885) went to the great sea of Amurru, and received tribute all along the coast. Adad-nirari III names Aniurru as between the Hittites and Sidon. Sargon (720) included the Hittites and Damascus in Amurru. Sennacherib (700) included Philistia and Phoenicia, Moab and Edom. Asshur-bani-pal (650) included Palestine in Amurru. The tendency was, therefore, to include only Northern Syria, and between 1100 and 650 to extend the name south until it included all Syria.

Now we can look at the position as it affects Egyptian history. From as early as the Pre-dynastic Age it is claimed that there has been a centre of Semitic influence and government in North Syria, that it had a full share in developing Babylonia, and that it lasted down to classical times, embracing what is known as the Aramaean kingdom. On the Egyptian side we find a large invasion from the East, founding the second prehistoric civilisation; but this seems more likely to belong to the region east and west of Suez. A clearly Syro-Mesopotamian invasion was that which overthrew the Old Kingdom, as shown by the buttons with foreign devices: with these must be noted the examples of symmetric scarabs, such as were later produced under Hyksos influence, but which are dated before the XIIth dynasty at Ehnasya (Pl. XIA) and Harageh. There is good ground for regarding this invasion as having come from North Syria or the Euphrates, and therefore as being Amorite. Then, after the Middle Kingdom, the same influence appears in the Hyksos invasion of Semites from Syria, who wielded a widespread power. Beside those recognised as Hyksos there are others who seem to have been their forerunners, Khenzer and Khandy, the latter of whom ruled over Syria and conquered Egypt, as shown on his triumphal cylinder (Univ. Coll.). Thus, there is good ground on the Egyptian side to look for a strong Semitic power in North Syria at the close of the Old Kingdom, and again at the close of the Middle Kingdom. This is in accord with Dr. Clay's position, and therefore on this side we welcome it as a gain to our historical view.

*La Fin du Moyen Empire Égyptien. Étude sur les Monuments et l'Histoire de la période comprise entre la XII<sup>e</sup> et la XVIII<sup>e</sup> dynastie.*—RAYMOND WEILI. 971 pp., 2 vols. Picard, Paris, 1918.

This work has appeared in sections in the *Journal Asiatique*, 1910-1917, and the whole is here put together in a convenient form. As this is the only detailed attempt to contract the period dealt with, in the brief space of 210 years, demanded by Berlin, it should have the fullest attention. As a collection of the scattered material remaining of that period, it will in any case prove a work of permanent value, even apart from the author's conclusions. The length of it is rather deterrent, and it might have been less prolix with advantage:

for instance, twelve lines of inconclusive argument deals with the identification of the cartouche of Neferhetep, which is all useless as the direct proof on a stele is stated in six lines more. A single line quoting the stele would have been all-sufficient. Also many examples of the simplest repetitions of a name are all set out in hieroglyphs at full length.

The serious question is how far we can follow, and rely on, the reasoning, and accept the conclusions. The main thesis is that a type of literary composition, deplored decay and devastation by foreigners, was started in early times and frequently re-used: the conclusion drawn from this is that such statements have no historic value. This is a position possible from a purely literary point of view, but the least knowledge of material history refutes it at once. The art and monuments of every land show a series of stages of growth and decay. In Egypt the periods of decay are obvious in two prehistoric ages, in the VIIth-XIth dynasties, in the XIIIth-XVIIth, the XIXth-XXIIIrd, and the Roman Age; in all these we see great decadence, and in all these historic ages there is the absence of public monuments and the shortness of reigns, proving the disturbance, poverty, and trouble in the country. The evidence of foreign invasion is seen in the new types of production, the new connections with surrounding lands, the new names and characters of the people. From every material evidence we see that it is hopeless to claim that the re-use of classical expressions shows that the complaints about the times are unhistorical. How often have the declarations of Jewish prophets been re-used as applying to the fall of Rome, or by the Puritan party in England? They are still felt to be the most vital expression of many of our troubles now. Shall we deny the historical truth of every account in which the phrases of Psalm or Prophet are used? The material facts of repeated invasion of Egypt are externally attested—from the West the Fatimites, the Greeks, the Libyans, from the East the Tulunides, the Arabs, the Persians,—to say nothing of remoter times. To claim that a “theme of disorder” is only a rhetorical exercise, is to shut one’s eyes to all the proved facts. It is impossible to accept this conception, which occupies a large part of the work, and underlies its whole fabric.

Another objection—perhaps more serious—is the way of treating basic documents. The account by Hatshepsut reads: “I have restored that which was in ruin, and completed that which was unfinished, since the stay of the Asiatics who were in the lands of the North and in Ha-uaret with the Shemau among them, occupied in destruction: they made a king for themselves in ignorance of Ra, and he did not act according to the orders of the god until the coming of my Majesty,” according to Weill; or the latter part according to Breasted “they ruled in ignorance of Re. He (the Hyksos ruler) did not do according to the divine command until my Majesty.” Now this is not a claim to the conquest physically, but to the conversion religiously, of the Hyksos. It is the obedience to Ra that Hatshepsut obtained. There is nothing to contradict the previous expulsion from Egypt; Hatshepsut only claims the restoration of monuments, and the obedience of the Hyksos to Ra, whether in Palestine or elsewhere. Capt. Weill goes on: “Hatshepsut has conquered the Asiatic destroyers installed in the Delta and in Ha-uaret . . . . Therefore Hatshepsut lied. . . . She usurped without any right the merit of having expelled the Asiatics” (p. 38). This is a false rendering of the historical document.

A most strange treatment of a document, in a book professing to discuss history, is that accorded to the Turin Papyrus. Not content with ignoring its

historic sequence, the whole of the lengths of reigns remaining in it are omitted. When publishing the text of it (pp. 590-3) not a single year is named. Yet there are twenty-four reigns still to be read in it after the XIIth dynasty, totalling 191 years, or an average of eight years. Can we take seriously any view of an almost contemporary document, when the most essential facts are omitted in discussing the very matter in question, namely, the years covered by the document? To any reader who knew no better, it would appear that no years were stated. It seems impossible to accept any conclusions drawn from such treatment, nor can we take this elaborate work as more than the effort of an advocate who distorts and omits evidence.

If in 1910 it could be said (p. 25) that "social disorder has nothing to do with an entirely personal drama" of weariness of trouble and wish for death, that is not the sense of the world in 1919, when we know what social disorder means. We can see before us now how closely the miseries of social disorder touch the personal lives of those who suffer. The lamentations of the Egyptians might all be used by Serbs, Poles and Russians.

In discussing the record about the Hyksos kings, objection is taken (p. 182) that they are described as destroyers, and yet they set up monuments in Egypt. This ignores the 100 years of confusion of the conquest, before they were united under one rule; this period is also overlooked when objection is made to recognising an interregnum in Africanus (p. 553).

In pursuance of abandoning awkward material, the dynastic divisions are entirely thrown aside (p. 183), "for us, who intend altogether to lose sight of the Manethonian dynasties in studying the monuments." Yet these dynastic divisions are pointedly shown by the monuments, not only in style and place, but by the founders of dynasties copying the titles of previous founders, and also by marked divisions in the Turin Papyrus.

A fundamental classification is made by what are termed the *Anra* scarabs (p. 191); a term used for all those with symmetric symbols and devices (p. 742). Because a scarab of Kha-nefer-ra Sebekhetep has such symbols (246), it is concluded that "the Sebekheteps have preceded Apepi, not far off; but at a short distance" (p. 248), or, in the index, "the epoch of the group is that of Kha-nefer-ra Sebekhetep" (p. 932, and see p. 453). This position seems to be an entire misconception. First, the word (though usually badly copied) is not *Anra*, but *Da-ne-ra*, "gift of Ra" ("Heliodorus"), as commonly found on scarabs about the XIIth dynasty, and on examples figured here (p. 744); or in other cases perhaps *Ar-ne-ra*, "born of Ra," as on p. 250. Second, the symmetric style, as on the scarab of Sebekhetep adduced (p. 246), is found as early as Senusert I (p. 745), and continues on to Tahutmes IV (p. 739). That such scarabs are of the XIIth dynasty is shown by the peculiar light blue glaze of some, which is never dated later than the early part of that dynasty. How can any close indication of age be founded on a style which lasts from early in the Middle Kingdom to the middle of the New Kingdom? Anyone who has collected scarabs on sites will know that symmetric scarabs are found almost wholly in the Eastern Delta: their style is that of a region, and not of a short period.

A further theory is that the symmetric scarabs of *Anra* type were made in Palestine (p. 732), because they are often found there. On the contrary the material, the glaze, the signs, are all Egyptian, and a far greater number are found in Egypt than in Palestine. That the Palestine scarabs are mainly of this type is to be expected, as it belongs to the Eastern Delta, nearest to Palestine; but to

suppose materials and workmen to be taken to Palestine, in order to export most of their products back into Egypt is fantastic.

The more important part of the work (pp. 276-514) is the discussion of the various families or groups, as shown by the parallel names of the same type. This is a useful principle ; yet as the author has to continue a single type of name, *Sekhem-ra*, over more than half the period between the XIIth and XVIIIth dynasties (p. 819) no close delimitation can be claimed. As a collection of material, with due connection of genealogic sources (as El-Kab tombs), this will be of permanent use to students, with the additions on pp. 226-251, 768-804. We may note in passing that the insertion of Ra with a personal name, as Ra-să-Hathor, is not merely a mistake of a scribe (p. 422, note 194), but occurs on contemporary objects of Ra-neb-taui, Ra-amenemhat, and Ra-sebekhetep. It seems to have been added as a token of descent from Ra. The general results of this discussion are put together in a *Livre des Rois* (pp. 818-880), which must be used subject to all reservations as to methods.

The crux of the whole work, to which all this material leads up, is the reduction of the documentary history of the Turin Papyrus and Manetho from a period of about 1,600 years to a period of 210 years, between the XIIth and XVIIIth dynasties. One or other view must be accepted, if the Sothic cycle and continuous kalendar are not rejected. The radical question is whether Egyptians placed contemporary dynasties in succession in a continuous list. The evidence that overlapping was avoided by Manetho is seen in the XIth dynasty, which lasted certainly over a century, but which has only forty-three years allowed, because the Xth dynasty was legitimate over the earlier part of the XIth. Again, Taharqa, who really reigned thirty-four years, is only allowed eighteen years by Manetho, because from that point the legitimate line was in Stefinates, great-grandfather of Psamthek I, and the XXVth dynasty could not be allowed to overlap the XXVIth. The examples that we can test therefore show that overlapping was not allowed in the history, and that a continuous single series of legitimate rulers was compiled. There is further evidence if we accept the Sebekemsafs, Nub-kheper-ra Antef, and others, as being of the XIIIth dynasty. They were important kings, and could not be placed as late as the decadence after No. 29 of the Turin Papyrus : yet they are not in that list, nor is there any gap sufficient for them in the earlier part. They were deliberately omitted, and presumably as not being the legitimate line. If such kings were omitted, we cannot suppose far less important kings to have been inserted overlapping the reigns of others.

The Turin Papyrus is obviously in accord with Manetho, and they must therefore be taken as supplementing each other. In Manetho the XIIth dynasty is of sixty kings, and in the Turin Papyrus after sixty kings is a break, beginning again with the formula "there reigned." Next, the XIVth dynasty is of seventy-six kings, and in the Turin Papyrus after seventy-three (or perhaps a few more) there begins the change to Semitic names, which correspond to the XVth dynasty of Hyksos in Manetho. The average of reigns of the XIIIth dynasty is seven and a half years in Manetho, and seven years in the ten reigns surviving in the Papyrus. In the XIVth dynasty Manetho's average is two and a half years, and the average of seven reigns left in the Papyrus is about three years. A closer correspondence of fragmentary material could not be expected.

The main attack on the continuity of the Turin Papyrus is made on the ground that a different type of name shows a change of dynasty. Apply this to

well-known dynasties and see the result. In the XVIIIth dynasty there are two kings with Ra-neb-*x*, three with Ra-*oa*-kheper, six with Ra-*x*-kheperu; in the XIXth three with Ra-men-*x*, three with Ra-user-*x*, Ra-ne-ba and Ra-ne-akhu. On the question of types of name we should have to split up each of these dynasties into three separate lines taken in irregular order. No canon of arrangement can be applied to obscure dynasties which will not give true results when applied to well-known periods.

Another line of attack is on the resemblances between the lengths of some dynasties. Elaborate theoretical stages of alteration of the text are presented to show how the existing figures arose from some very different form. The lengths of the dynasties in Africanus' version of Manetho, from the XIIIth to the XVIIth, are 453, 184, 284, 518 and 151. The only relation here is that the last is a third of the first. A change is made by adopting 259 from Josephus in place of 284; then 259 is half of 518. After this we find such theories as, although "we have suppressed" the XIIIth dynasty, yet take the sixty kings stated for that, add thirty-two kings of the XVIth dynasty, making ninety-two, double this (for no reason) and so get 184 years of the XIVth dynasty, which "is therefore artificial" (627). Now let us play with numbers likewise, about a period well known. The XXIInd and XXVIIth dynasties are each 120 years; both foreign in origin; evidently a duplication in history. The XXVth is sixty-one years, also foreign. Therefore there was but one foreign period of sixty years (XXVth); that doubled, for the reigns of the contemporary Egyptian rulers, made 120 years, and that is the origin of 120 years for the fictitious foreigners of the XXIInd and XXVIIth dynasties. This really fits much better than the numerical games played on the Hyksos Period; and all being foreign dynasties the "Theme of disorder" would account for the whole, according to Capt. Weill's principles.

Such absurd treatment of historical records is what is set against the concordant statements of the Turin Papyrus, written only two or three centuries after the age in question, and the record of Manetho drawn from the material available while Egypt still had an unbroken continuity of literature. What is arbitrarily substituted for the ancient record? The 1,600 years is cut down to:—

Contemporary Upper and Lower Egypt kings	...	...	20 years.
Thebans of Sekhem-ra group	..	..	90 ,,
Theban Sebekheteps and Hyksos	}	..	85 ,,
Later Sebekheteps and later Hyksos		..	..
Theban and end of Hyksos	..	..	.. 15 ,,
			<hr/>
			210 years.

In these 210 years there must be compressed 133 kings of the Turin Papyrus, the great and lesser Hyksos and the XVIIth dynasty. Several of these kings we know to have had long reigns, enough of them to fill up the whole 210 years. Mermashau is placed as a Delta king, though his statues are of black granite from Upper Egypt. The reigns recorded for the Hyksos Khian and Apepi (who are agreed to have reigned over all Egypt, p. 207) alone occupy 111 years, and the whole of the great Hyksos kings total to 259 or 284 years. All this has to be suppressed, though it is certainly Manethonian history.

The wholesale disregard of the records, the suppression of the lengths of reigns stated (both in the Papyrus and Manetho), the fanciful theories of

construction of the texts, the unhistoric treatment of the records of disorder and invasion, all prevent our regarding this work except as we regard the Egyptian history in Josephus, very valuable for reference, but without any reliance on the conclusions. This seems to be the best that can be done to destroy Egyptian history in favour of an arbitrary shortening that has no support in documents or in probabilities.

*Le Musée du Louvre pendant la guerre, 1916-1918.*—EDMOND POTTIER. 20 pp., 2 pls. 1919.

Those who have seen the back view of a mob of statues clustering in the bay of Demeter at the British Museum, and who have read of the strange holes in which our treasures have been secured from air attack, will like to hear how the French have fared. With them it was more a risk of plunder than of destruction. On the day of French mobilisation the director of museums met his colleagues and instructed them to put their treasures in safety for fear of Zeppelins. The rapid advance of German troops before the end of a month changed the orders to removal, packing and placing in southern cities. Toulouse was the centre, and a photograph shows the rows of cases and of railway wagons run into the church of the Jacobins for cover. Then, when immediate risks were less, the public demanded their museum; and, as France could do its business without taking museums for offices as in London, several halls were re-opened after February, 1916. When the Goths began to bomb Paris, all valuables were put under the solid vaulting of the ground floor. Next the Bertha bombardment began, and the pictures and marbles were sent off to Blois, and more sand-bagging was done at the Louvre. When the last struggle threatened to involve Paris, there was a scramble of museums and dealers to get packers, boxes, cotton and straw or hay to clear off everything, and near a hundred cases were got off in the last fortnight of June. After the armistice, in December and January, the cases were returned, and order was gradually restored.

*Italy's Protection of Art Treasures and Monuments during the War.*—SIR FILIPPO DE FILIPPI. 8 pp. (British Academy, 1918.)

We read here of the endeavours to preserve from modern barbarians the treasures which no invaders, however brutal, have yet wished to destroy. Two months before Italy's entry in the war, active measures were taken to protect monuments. The bronze horses of St. Mark's were taken down and placed in the Doge's Palace in a single day, sand-bagged and walled up. The great difficulty in Venice is the quaggy foundation, which prevents adding any great weight for fear of displacements. St. Mark's was covered with sand bags and sea-weed mattresses, which are light, elastic, and almost incombustible, also very effective in case of explosions. Canvas curtains are also a useful screen for glass or mosaics. All portable objects and the stained-glass windows were removed. At the Doge's Palace the portico arches were supported by masonry pillars, and the loggia with wooden props; the sculptures were sand-bagged, and water pipes laid all over the buildings in case of fire. Venice was bombarded eleven times, specially on the churches. At Padua the Giotto frescoes were buried in sand bags; the Gattamelata statue, and the Colleone of Venice, were buried and boarded up, like Charles at Charing Cross. In all the other cities, Verona, Bergamo, Brescia, Milan, Parma, Bologna, the monuments, pictures, and treasures had to be protected.

Ravenna was an object of especial barbarism. There was no trace of military use there, hardly any population to be destroyed as civilians ; there was no purpose in attack, except the Germanic ideal of destroying all that gives national interest and historic sense to a people. To attack the churches of Ravenna is a depth of savagery which is only reached by the scientific development of psychological cruelty. The bomb which fell into S. Apollinare Nuovo, broke in the corner of the basilica, but happily did not destroy the mosaics. The whole tomb of Galla Placidia has been completely enclosed for protection, and San Vitale and the Baptistry strengthened throughout. At Ancona heavy shells were fired at the Duomo, high on the hill, and severely damaged it. The Arch of Trajan has been thoroughly built up with sand bags.

After their hideous depth of savagery, against all art and history, the Austrians are unabashed. A letter reached London lately from a Viennese stating that as he had excavated in Mesopotamia he would be glad to join in British work there. The reply was that the destruction of the library and apparatus of the University of Belgrade made it impossible for any Austrian to join in British work. That savage attempt to root out the intellectual life of a nation, was the clearest case of the degradation with which no civilised person could be associated.

F. P.

*The New Catalogue of British Museum Greek Inscriptions relating to Egypt.*

The editing of Section II of Part IV of *Greek Inscriptions in the British Museum* has been carried out by Mr. F. H. Marshall Hall, M.A., and the texts numbered from 1063 to 1093 are those acquired from Egypt and the Sudan, including one inscription obtained as late as 1914.

The volume is most beautifully printed and the facsimiles, or photographs (with the exception of that of the Rosetta Stone) finely executed ; it will be a great advantage to scholars to have this series of Egyptian records readily available, and to know where the originals may be inspected.

One of the most important texts in the collection is that from Syene, or Aswan, upon a column of red granite, which originally was erected at Elephantine. Much of the wording has been lost, but by the effort of several specialists a good deal has been restored, and it is found to comprise no less than ten documents concerning the later Ptolemies and their relations with the priests of the Chnoub Nebieb temple at Elephantine.

The records are either petitions from the temple servants to the king, or grants of privileges from the latter to the priests. The Syene quarrymen also put in their plaints ; probably, as worshippers of Chnoub, they also had their residences upon land leased from the temple, and thus sacred soil.

Although the documents concern kings as late as Ptolemy VIII and Ptolemy X, the latter in a letter dates it in the Macedonian month Dasios, equivalent to Egyptian Epiphi. Two generals commanding at Elephantine are mentioned, Hermokrates and Phommus. They are known from other papyri or inscriptions as being over the forces in the Thebaid.

Another historic monument is that found at Gizeh, which was erected by the citizens of Busiris in honour of Tiberius Claudius Balbillus, prefect of Egypt under Nero. The text from the dining hall of the Weavers' Guild at Theadelphia has been made of more interest by the evidence as to such associations recently supplied by the Oxyrhynchus Papyri.

A curious text is from the roadstead of Abukir, containing a dedication

of a statue of the Phoenician deity Herakles Belos to Sarapis. The donor was not an Egyptian but a native of Askelon. One inscription is incised upon a gold plaque, and must have been deposited under the temple of Osiris at Canopus. It is a dedication of Ptolemy III Euergetes and Berenice his wife, daughter of Magas of Cyrene.

This Ptolemy was son of Ptolemy II, whose first wife was daughter of Lysimachus. Ptolemy II subsequently married his sister, Arsinoe, who adopted her stepson, afterwards Ptolemy III, as her son. This historical fact is now substantiated by this memorial, which calls Euergetes "son of Ptolemy and Arsinoe."

A similar votive plaque is in the Alexandria Museum. It preserves a dedication to Philopator and belonged to the Alexandria temple.

The next inscription chronologically is No. 1514. It is an offering to Ares, as a deity of hunting, by Ptolemy IV, dated about 206 B.C., and gives a text of six lines. It refers to elephant hunting, which sport the Macedonian monarchs much favoured, as it also supplied them with tame elephants for war equipment.

In this inscription Pisidian soldiers are mentioned, being another instance of the numerous countries from which the Ptolemies secured mercenaries. Mr. Hall provides what may be considered as the final edition of the Rosetta Stone, but does not refer to its partial duplicate of the Egyptian text, known as the Stele of Damanhour. It is a decree of the Council of the Memphis priests under Ptolemy V. All recent documents that throw light upon this superbly instructive text are utilised. Thus the hitherto mysterious mention of a thirty-year period is cleared up, by noting that that was the duration between the ancient royal *Sed*-festivals. The Egyptian version of the stone instead of "thirty years" reads "*Sed*-festival."

The allusion to the priestess of Berenice Euergetes, the child of Magas alluded to above, is illustrated by the Amherst papyri, whilst the financial matters in the Rosetta text are compared with the Tebtunis Ptolemaic revenue documents. Perhaps the review of the Rosetta Stone was written some time ago, because no reference is given to Otto, concerning priestly privileges, or to Lesquier for military matters. The worship of Arsinoe is illustrated by ostraca and a demotic document.

The last Ptolemaic record in a British Museum inscription concerns the eleventh of the Lagides. It comes from Paphos, in Cyprus, and quotes a letter of Alexander Grypus to Ptolemy Alexander, who was appointed governor of Cyprus by Cleopatra III. He is, however, styled Basileus in the text. Its date is 109 B.C., though he was not king in Egypt till 108 B.C. A single line upon a statuette base (*Memphis*, I, liii) entitles the Egyptian river god Νίλων γονιμωτά(τω)ι. This expression is easily explained by the deity's statues depicting him surrounded by his numerous offspring.

A partly preserved slab from Antinoe, only obtained just before the war, gives the introduction to a panegyric upon a personage, said to have been a Platonic philosopher named Marcius Dionysodoros. He was also a councillor, and was one of the fortunate ones who for their erudition was maintained at, and by, the Museum.

Other epigraphical records and papyri refer to people so supported, including a text from Thebes and a Rylands papyrus.

There is one text from the Sudan which entitles the Nile "Oceanos," making the river a double of the Celestial Stream.

Several inscriptions, all short and fragmentary, are from Naucratis, including a poorly-composed poem upon a certain Herakleides who died just previous to the day upon which he was to have been married. (*Naucratis*, I, xxxi.)

These inscriptions, which would be a source of pride to any great museum, have been obtained by voluntary gift, purchase, or expensive explorations, and not as the loot of unjust wars of conquest. They form such a corpus of information regarding Egypt, that no history of that country in Graeco-Roman times will be complete without full consideration being given to them, and their editor is to be congratulated upon his work, which is a model for such a treatise.

JOSEPH OFFORD.

*Cronologia Egiziana*.—LUIGI PESERICO. 8vo, 71 pp. Vicenza, 1919.

This essay attempts to link various astronomical results with historical statements which would not usually be accepted. Results from Greek and Italian sources, especially the Parian chronicle, are here connected with Egyptian dates. The eclipse of 1411 B.C. is the date when the Pelasgi near Spina won a great victory over the natives. Eighty years after, in 1331 B.C., the Pelasgic *Sus* reigned, called Evander by the Romans and Perseus by the Greeks. Then we read of the invasion under Merneptah taking Tanis, a Pelasgic captain violating the queen of Merneptah, the plundering of the store cities of Pithom and Ramesses, a Pelasgic captain killing Seti Menepthah, only son and co-regent of Menepthah I. We may wonder where all this detail is to be found; there is none of it in the Parian Chronicle. If it is in the author's translations of Etruscan documents, they need to be set out and established before they can be applied to history. In due course we reach the immigration of Abisha in the XIIth dynasty "whom some identify with the biblical Abram"; a footnote adds that Ab-ram "father of elevation" is equivalent to Ab-shadu "father of height," which was Ab-sha. After going through Assyrian and Biblical chronology and the birth of Phaleg, there comes the "Rubble drift," which we usually call the "Noetic or universal deluge," beginning at some time in the four years 3048–3045 B.C. After this it need hardly be said that the writer has never heard of the Egyptian chronology, and depends upon Meyer for the possibility of a deluge at that date.

As a minor matter, the reign of Ramessu II is placed as beginning in 1325 B.C., which seems impossible. The date of 1300 B.C. agrees as well with the occurrence of a full moon on Mekhir 16. As the relation of lunations to Egyptian years of 365 days, and months of 30 days, cannot be easily worked except by compiling a table, and is wanted for any question of lunar dates, it is well to put it here on record. The years below are 365 days, months 30 days.

5 years 12 months = 2,185 days : 2185.22 = 74 lunations.

8 years 7 months = 3,130 days : 3130.23 = 106 lunations.

11 years 2 months = 4,075 days : 4075.19 = 138 lunations.

19 years 10 months = 7,235 days : 7234.99 = 245 lunations.

25 years 0 months = 9,125 days : 9124.95 = 309 lunations.

III years 2 months = 40,575 days : 40574.99 = 1,374 lunations.

Thus, every 25 years the lunations of a given month recur to the same day of the year, within .05 day. At shorter intervals of 5, 8, 11 and 19 years a lunation occurs on the same day of some month. For reducing longer periods the cycle of III years 2 months may be used as correct to .01 day, in the Egyptian kalendar.

## PERIODICALS.

*Académie des Inscriptions et Belles-Lettres.*  
*Comptes Rendus, 1917.*

MORET, A.—*Un Jugement de Dieu.* The stele published by M. Legrain in the *Annales du Service*, XVI, 161, is here retranslated. It has at the top a scene of priests bearing the barque of the divine Aahmes and Nefertari, and a priest Pasar standing before it adoring and praying "Oh judge who dispenses justice, let the owner of the house be justified, thanks to thee." Below is "Year 14 (or 18, or 26 or 34), 25th day under the Majesty of the king of South and North Usermaa-Ra, son of Ra, Ramessumeriamen, possessing life,—the day when came the priest Pasar with the priest Thay to enquire before the good god Nebpehtira. Came the priest saying 'As to this field it belongs to Thay, son of Sedemnef and to the children of Hayu.' The god remained unmoved. He returned to the god saying 'It belongs to the priest Pasar, son of Mesmen,' the god approved with his head very strongly, in presence of the priests of the good god Nebpehtira, the prophet Paaru, the front priest Yzanubu, the front priest Thanefer, the back priest Nekht, the back priest Tahutimes. Made by the priest, artist-scribe of the temple of Ramessumeriamen in the temple of Osiris, Nebmehyu."

This is a couple of centuries before the various other judgments known under the priest-kings. The case in question is connected with other documents from Saqqareh. Pasar is son of Mesmen, and under Aahmes I an ancestor of Mesmen named Nesha had received lands from the king. In the time of Horemheb quarrels had arisen among the descendants of Nesha, and some tried to partition the property, but in the direct line Huy, the father of Mesmen, had succeeded in keeping possession. Again under Ramessu II the collaterals attacked with false deeds, and got a decision against Mesmen, in favour of Khayuy. Here in this stele from Abydos is the sequel, that Pasar, son of Mesmen, got a divine decree in his favour, against the claims of Thay and the children of Huyu. The modification of *Kh* at Memphis to *H* in Upper Egypt is a known dialectic change. The name Thaui is known in the Memphite family, corresponding to Thay in the Abydos text. Beside the conclusions of Prof. Moret, that divine decrees long preceded the priest-kings, and that such could supersede civil judgments, there is another extremely important conclusion. It has been usual to sneer at the decrees by the signal of the god as obviously only a trick of the priesthood. Here we have two priests appealing to the god-king. They must have believed that the decision was not manipulated, or neither priest would have agreed to be bound by it. In some way the decision did not depend on human interference, but was equivalent to drawing lots for a reply. The reason for an appeal to King Aahmes being recorded on a stele at Abydos is doubtless because his pyramid was there, and his worship would be carried on by the priesthood with a sacred bark and image to which the appeal could be made.

*The Sculptured Stones found at Hal Tarxien, Malta, in their relation to Cretan and Egyptian Decoration.*—EINAR LEXOW. 14 pp. Norwegian, 4 pp. summary in English. (Bergen Museums, Aarbok, 1918-9.)

Dr. Lexow starts from the latest dating of Egyptian history, and accepts that there are no spirals before the XIIth dynasty, that is 2000-1800 B.C. according to him. Hence he concludes that the spiral patterns originated long before in the Balkans, and not in Egypt. This is very doubtful, according to the dating used by the Egyptians. Next he proposes that the beautiful branching patterns found on the stones in Malta, were the earlier stage of the spirals also found there, and that such is the origin of spiral ornament. Certainly it is very improbable that the formal spiral would give rise to the tree patterns, and therefore his main thesis seems likely. There is no reason to bring in the dating to the question, as on any dating it seems that there was a large foreign admixture when the spiral appears in Egypt.

*A Stamp Seal from Egypt.*—WINIFRED CROMPTON. 6 pp., 1 plate. (Journal of the Manchester Egyptian and Oriental Society, 1917-8.)

This seal of limestone has a rudely cut figure of a man and antelope. Seals of similar design are quoted, and it seems likely that this is before the XIIth dynasty, and perhaps of the Old Kingdom. The limestone stamps of the XIIth dynasty are less distinct in style and show a later stage of such work, which is clearly foreign.

*Bulletin de la Société Archéologique d'Alexandrie.* No. 16. The interest of the papers here is almost entirely classical, and so rather beyond our scope. The excavations of Col. Tubby and Lieut.-Col. James in the suburbs of Alexandria unfortunately miss the main question, as to how much is Ptolemaic and how much Roman. This might have been settled by the coins found, which are passed over as "unrecognisable," and "a few coins hopelessly oxidised." Anyone knowing coins could say within a century what their age was by the fabric alone. The pottery, lamps, etc., would likewise have settled the date. The only idea seems to have been searching for notable objects, and not settling historically the age of what was found. Clear statement should be made as to whether the objects were contemporary with the graves, or only in the surface rubbish.

Dr. Granville gives an interesting biography of Henry Salt, the consul who figures largely in the early discoveries in Egypt. A thoughtful looking man, with something that recalls Burns and Blake in his expression, he went to India and Egypt with Lord Valentia in 1802-6, as an artist and secretary. In 1809 he was sent on a British mission to Abyssinia. In 1815 he was appointed Consul-General in Egypt. He there fell in with Burckhardt and Belzoni, and employed the latter for many years in excavations, from which come many of the older entries in the British Museum marked "Salt Collection." He was in bad health, but could not leave Egypt owing to his duties. He died in 1827 at the age of forty-seven, and is buried at Alexandria. He was one of the valuable men who rose to the newer interests of his times, and was able thus to help in the early growth of research in Egypt.





1. THE MALLON STATUE,  
2. FROM DEIR EL-BAHRI,  
3. EBONY.

4. THE VIENNA HEAD.  
5.  
6. MENTUHETEP II, GEBELEYN.

# ANCIENT EGYPT.

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## A MENTUHETEP STATUE.

THERE has lately been published by M. Paul Mallon, of Paris, a portfolio including some fine Egyptian figures. One of these is of much interest, and he has kindly allowed the head to be reproduced here. The figure is of ebony, twenty-seven inches high. The pose of the standing position is more thrown back than in the Old Kingdom, from the waist upward. The head has had inlaid eyes, now missing. The expression is marvellously vigorous and full of vitality, and it differs from other Egyptian figures not only thus, but also in the type. The very wide jaw, short chin, and high cheek-bone have hardly a parallel in other statues. It is clearly one of the great masterpieces, and of a rare style of work.

What period can be assigned for this? So far as external evidence goes, it is stated to have come from the XIth dynasty temple of Deir el-Bahri; and looking at the large slabs of sculpture which passed from the work there to the dealers, such a figure might more easily be taken surreptitiously. The nearest parallel for it is a head in Vienna, nine inches high, of green metamorphic stone. The views of this (borrowed from Bissing's *Denkmäler*) are here placed parallel to the Deir el-Bahri head. Allowing for the different school, working in different material, and the loss of the inlaid eyes, we see a close resemblance in the features. The wide short jaw, the proportion of the outline of the nose on the face, the high cheek-bone, the slope beneath the jaw, the squareness of the temple, all agree within near limits. The sternness of the work in polished stone naturally makes a different treatment and expression to the vivacity of the wood carving. The Vienna head is concluded to be of the Middle Kingdom by Bissing, who points out that the uraeus on it shows it to be after Mentuhetep II, who first wore it as in our Fig. 6.

Which of the Mentuheteps might the ebony figure represent? We will here follow the arrangement of Gauthier, as it seems to accord better with the artistic development than that of Naville, which puts Neb-tau-i-ra after Deir el-Bahri temple. The order of Gauthier for the Mentuheteps is as follows, stating the distinctive *ka*-name and Ra cartouche:—

- I. Neter hezt.
- II. Neb.taui Ra.neb.taui.
- III? Sonkh.ab.taui.
- IV? Sma.taui Ra.neb.hept.
- V. Sonkh.taui.f Ra.sonkh.ka.
- VI. Ra.mer.onkh.  
Ra.skho.ne.

Of these I is found at Deir el-Bahri, on sculptures from Gebeleyn, the head here No. 6. II is at Wady Hammamat. IV is the king of the Deir el-Bahri temple; according to Naville divided into two rulers writing the name by the oar and by the square, two homophones. V is the well-known Sonkhkara. VI is from a statue found at Karnak by Legrain. The last king here is not placed by Gauthier.

For the portraiture, though over ninety plates have been published from the temple, the royal portraits, unfortunately, have not been collected and reproduced efficiently on a full scale together. The complete heads on the British Museum sculptures do not all seem to have been published. The heads that are photographed in *The XIth Dynasty Temple of Deir el-Bahari* are in Vol. I, xii, xiii; Vol. II, v, vi; Vol. III, xii. None of them seem to have the prominent nose of the ebony figure, as these all agree pretty closely in having a slightly aquiline, massive nose, with little projection, a type seen now in some Sudanis. The Vienna head, when perfect, may have agreed with the Deir el-Bahri type. If so, the nose would not accord with that of the ebony figure. The Fig. 6 of Mentuhetep from Gebeleyn appears to be that in *XIth dyn. Temple*, I, xiiA. The general resemblance of this type to that of Ra.neb.hept shows that there was a family type; and it seems, then, most likely that the ebony figure, by its resemblance to the Vienna head, belonged to a successor of Ra.neb.hept, who dedicated his statue in the temple of his ancestor. When workmen are not well rewarded for the objects found, much is taken away without any record of its original place and connection. If we knew the position to which this figure belonged—the burial chamber—the royal shrine—the family shrines—or elsewhere—we might have fixed the historic value of one of the most striking portraits known from Egypt.

W. M. FLINDERS PETRIE.

## ON THE USE OF BEESWAX AND RESIN AS VARNISHES IN THEBAN TOMBS.

IN some of the tombs in the Theban Necropolis it appears that wax was mixed with the colours used for the wall-paintings. The use of wax for this purpose has not been mentioned before, to the knowledge of the writer, but on turning over fragments of mud plaster from the walls of the tomb of Antef (No. 155) which had been buried in rubbish for some considerable time, he found that many of the colours were covered with a thin grey coating or skin. A brief examination on the spot proved this to be a wax, and a further investigation by Mr. Robert Mond in London gave the same result. A close examination of the walls of other tombs then revealed the fact that wax was fairly frequently used as a fixative or as a varnish in tombs ranging from the time of Amenophis I to that of Amenophis II. That the use of wax should be limited to this short period is interesting, but up to the present it has not been detected in tombs of either an earlier or a later date.

At the present day, the wax remains upon the tomb walls as a greyish and partially opaque skin which is readily detachable from the colour beneath, and thus gives impression at first sight that it was merely applied as a kind of varnish. Mr. Mond has however found in the sample submitted to him that the substance was as plentiful in the middle and bottom layers of the colours as on the surface, which suggests that the paint was mixed with the wax before being applied to the walls. The melting-point of the wax in the samples examined was 64° C., and as the melting-point of beeswax is 61° to 64° C., it seems probable that it was beeswax which was employed. Beeswax is one of the materials imported into Egypt from the Sudan at the present day, and doubtless was in ancient days. The wax produced in Egypt is of a very poor quality and dark in colour. There is strong evidence that in some cases the wax was applied to the surface of the colours instead of being mixed intimately with them.

In several tombs, and notably on the walls of the inner passage of the tomb of Kenamūn (No. 93), the wax has been applied in this manner rather carelessly, and has encroached on, and slightly darkened, the white ground of the painted scenes. In the tomb of Antef (No. 155), the painter did not trouble to go round the small patches of the grey ground to avoid darkening them, but covered them also with wax.

There is no doubt that the application of wax was found greatly to improve the brilliance of the colours, especially the reds, blues, and greens. The re-melting of the wax on small painted fragments leads to the colours brightening up in an extraordinary way.

The question arises how this wax was applied, for even in a hot climate like that of Egypt it would never naturally be in a more melted condition than just pasty. It is, therefore, probable that it was mixed with some solvent, such as a volatile oil like turpentine ; the process of applying heated wax to the walls, as was done in the case of the Hawara portrait panels, would have been extremely tedious and uncertain. It would also take a considerable time to cover the walls of a tomb in this manner.

It is possible, of course, that an open brazier was held close to the portion of the wall to be treated, and a lump of wax then rubbed over the portion thus heated. A second application of the brazier locally to parts thus prepared would cause the wax to be well absorbed by the paint and plaster. If this method were the one adopted, it would perhaps account for wax being found right through a colour and not only on the surface, as well as overrunning the limits intended.

The following is a list of those tombs in which the waxing of colours has been observed :—

Tomb 179.	NEBAMŪN	..	..	HATSHEPSOWET.
„ 251.	AMENMŌSE	..	..	Early TUTHMOSIS III (?).
„ 155.	ANTEF	..	..	TUTHMOSIS III.
„ 39.	PUIMRĒ	..	..	TUTHMOSIS III.
„ 81.	ANENA	..	..	AMENOPHIS I-TUTHMOSIS III.
„ 82.	AMENEMHĒT	..	..	TUTHMOSIS III.
„ 86.	MENKHEPERRASONB	..	..	TUTHMOSIS III.
„ 93.	KENAMUN	..	..	AMENOPHIS II.

The colours in the tomb of Puimrē are applied direct to the stone without an intervening coat of plaster.

In many tombs the wall paintings were covered with a varnish, which was made from some kind of resin, whose variety cannot, however, be ascertained as yet. In some of these tombs, the varnish is well preserved, though darkened in tone, but in others it has either scaled off through being applied too thickly, or it shows a badly cracked or fissured surface. Instances also occur where the varnish has become much blackened through age, more especially in those tombs which have been inhabited, a resin varnish apparently having a great affinity for smoke. Sometimes varnish was applied to the whole surface of a wall, but more usually only certain colours were treated with it, these being principally yellows and reds. It is difficult in some cases to distinguish between colours so treated, owing to the varnish darkening in tone (Tomb 150 and others).

There is strong reason to suspect that a varnish or similar medium was mixed with the pigments as well as applied to their surfaces, as some colours show a slight gloss combined with a peculiarly hard surface, the appearance of which is totally unlike that of a colour which has had a varnish applied only to its surface. It is to be regretted that up to the present only a few samples of varnished colours have been examined, owing to lack of material. It is highly undesirable to obtain samples direct from the tomb walls (which has been done in the past) and the only way is to obtain them from fallen fragments found in the course of excavating a tomb, which are either too poor to replace on its walls or whose proper position cannot be determined.

For those interested in this special question there is given below a list of some tombs whose paintings have either been varnished or possibly had a varnish mixed with their pigments :—

Tomb 40.	AMENHOTPE ..	..	Whole walls varnished.
„ 52.	NAKHT ..	..	Varnish applied only to limbs of some small female figures.
„ 64.	HEKERENHEH ..	..	Reds, blues, and greens, varnished.
„ 74.	THANUNY ..	..	Varnish applied to some of the greens.
„ 90.	NEBAMÜN ..	..	Yellows appear to have been treated.
„ 93.	KENAMÜN ..	..	Whole walls varnished and others waxed.
„ 130.	MAY ..	..	Reds and yellows varnished.
„ 139.	PERE ..	..	Reds varnished in places.
„ 161.	NAKHT ..	..	Many colours varnished.
„ 175.	(Name lost) ..	..	Reds and yellows varnished.

All the tombs mentioned above belong to the period of the late XVIIIth dynasty, the majority being of the time of Tuthmosis IV. Up to the present no examples have been found in the Necropolis of tombs of an earlier date that have been varnished wholly or partially, with the possible exception of yellows. A certain yellow used in the Theban Necropolis which was made from a compound of arsenic (orpiment) was generally applied over a white ground owing to its transparency. It thus acquires a glazed appearance which to the casual eye suggests a varnish.

There is not any known case of the employment of varnish for the purpose of protecting or enhancing colours in Ramesside tombs, with the one exception of Tomb 23, of Thoy or To. Probably varnish was soon found to be unsatisfactory as a medium for tomb decoration, though it was extensively used in the XIXth-XXth dynasties and later, for the decoration of coffins and funeral furniture.

The question now arises as to where the resin or resins were procured to manufacture such varnishes. Egypt does not produce any resin-bearing trees, with the exception of the acacia, and the nearest source of supply would be Syria and the North Coast of Africa, from which places sandarac and mastic are obtained.

Prof. Laurie has examined the question fairly closely in his *Materials of the Painters' Craft* (p. 31), where, in discussing a certain varnish found on a coffin of the XIXth dynasty, he concludes that the varnish used was a natural semi-liquid resin as obtained from the tree, like our Venice turpentine or Canada balsam, probably laid on after warming. He also states (p. 30) that a solid resin liquified by heat cannot be evenly spread on a surface, and it at once cracks on cooling. Now in Tombs 52 and 139, in which some female figures are thickly coated with a resinous varnish, it would appear that this was the method employed; for the varnish, besides being laid on coarsely, is now covered with numerous fissures and cracks (*see NAKHT and PERE*). In other tombs, also, the appearance of the varnish is very similar, which leads one to suppose that here again the resin was applied to the colours hot and not mixed with a solvent. On the other hand, there are tombs in which the varnish is fairly evenly spread and quite free from the blemishes mentioned above. One is, therefore, forced to the conclusion that in some tombs the resin was applied to the walls after being liquified by heat, and that in others a solvent was used with the resin to make a varnish either to coat or mix with the colours. What this solvent was it is impossible to say, as resin is only soluble in alcohol, turpentine or petroleum. If, as seems likely, turpentine was the solvent used, it could only have been procured from

Syria and the North of Europe, while petroleum, which is present in Egypt, could only have been obtained in an unrefined state.

Egypt's strong trade connection with Syria in the XVIIIth dynasty was probably responsible for the marked change observable in tomb decoration at that period<sup>1</sup> and for the introduction of the use of resin as a varnish. Syria at that time was exporting a quantity of material which may have been new to the Egyptians, and of which they did not properly understand the uses. The employment of varnish as a means of protecting colours, or perhaps for the purpose of brightening them, was a radical change which did not last very long, owing perhaps to the inborn conservatism of the Egyptian, or to the fact that it was found that a varnish did not in the end improve a colour but actually darkened it.

ERNEST MACKAY.

[The use of wax may be seen, mixed with dark green colour, as a filling of the hieroglyphs on the red granite coffin of Ramessu III in the Louvre ; also in incised figures on the wooden coffins (Univ. Coll.). This was probably the earlier stage of using coloured wax for portrait painting. The use of clear wax over colours was noted on the late sarcophagus of Ankhru at Hawara ; this suggested securing the stucco by melted wax, and hence the excavators' system of using paraffin wax as a preservative. As to the use of turpentine as a solvent for wax or resin, the natural turpentine would be useless, being a thick syrupy resin. It is only the distilled oil of turpentine that would be of use. Pliny describes two rude methods of distillation. "From pitch an oil is extracted . . . it is made by boiling the pitch and spreading fleeces over the vessels to catch the steam, and then wringing them out." (XV, 7.) "In Europe tar is extracted from the torch tree by the agency of fire . . . The wood of the tree is chopped into small billets, and then put into a furnace, which is heated by fires lighted on every side. The first steam that exudes flows in the form of water into a reservoir made for its reception ; in Syria this substance is known as *cedrium*, and it possesses such remarkable strength, that in Egypt the bodies of the dead after being steeped in it, are preserved from all corruption." (XVI, 21.) From this it seems that in the later times, at least, an oil of turpentine was prepared in Syria for Egypt. The resin employed to coat paintings is described thus : "From the *sarco colla* (*Penaea Sarcocolla*, Linn.) a gum exudes that is remarkably useful to painters . . . similar to incense dust in appearance, and the white kind is preferred to the red." (XIII, 20.)—F.P.]

<sup>1</sup> Witness among other things—Floral friezes and ornamental ceilings and the use of the disc of the sun on top of the cheker ornament when that ornament was employed as a frieze.



## THE KINGS OF ETHIOPIA.

THE journal *Sudan Notes and Queries*, issued quarterly since January, 1918, is mainly devoted to the customs and folk-lore of various tribes, a most needful help to administrators. The only articles touching Egypt are a series on the history of Ethiopia by Dr. Reisner, which is mostly familiar ground to our readers. The important new statement is the list of Ethiopian kings, as discovered and arranged from the excavations of the Harvard-Boston Expedition. Those with an asterisk are newly found.

	B.C.		B.C.
Taharqa ...	688-663	*Astabarqaman ...	466-463
Tanutamon ...	663-653	*Sa'asherqa ...	463-443
Piankhy II ...	653-633	*Nasakhma ...	443-438
Atlanersa... ...	633-623	*Malewiyaman ...	438-408
Senkamanseken ...	623-603	*Talakhaman ...	408-403
*Anlaman ...	603-573	*Amanherinutarik	403-373
Aspalta ...	573-553	*Baskakeren ...	373-372
Amtalqa ...	553-538	* ? ...	372-368
*Malenaqan ...	538-528	* ? ...	368-348
*Nalma'aya ...	528-523	Harsiotef...	348-313
Netaklabataman	523-503	Piankalara(?) ...	313-298
*Karkaman ...	503-488	Nastasen ...	298-278

The order has been settled by the principle of sequence dating, the resemblances of one group of objects to another indicating their order of connection. The lengths of reigns seem to be approximations of ten or twenty years, or sometimes five or fifteen, arrived at apparently by the amount of work observed in each reign. The beginning and end of the list is fixed by contact with Egyptian sources. Any student of Ethiopic history will need this number (January, 1919), which can be obtained (3s.) at the Sudan Government Railways Office, 5, Northumberland Avenue, London, W.C. This journal may well be the basis of a national magazine of the Sudan.

## NILE BOATS AND OTHER MATTERS.

(Continued.)

WE must now describe how this constructive difficulty, making a skin composed of many pieces into a continuous whole, one which could withstand longitudinal and transverse strains without yielding, was overcome.

Our wooden boats, whether "carvel" or "clinker" built, depend to a large extent upon the ribs which, however, would not maintain their verticality but for the skin of planks nailed to their outer sides: the ancient boat is a unit, a shell. The method made use of for holding the short planks one to the other becomes therefore a matter of the first importance. The keel plank (as I will call it) in the case of the Museum boats is made of but few pieces, so as to avoid the weakness of joints.

The wood of which these ancient boats are built is the same as that made use of to-day, very hard, but impossible to procure in straight lengths, hence the method of building up and fitting together of the parts as here described.

Iron was not made use of, perhaps not available in sufficient quantities.

We might have expected to find pins or pegs driven into holes prepared for them in the upper and lower planks, but if they are present in these specimens of ancient boat building they cannot be seen.<sup>1</sup> In the present case we find only dovetails with the occasional use of a species of tongue, which will presently be described (Fig. 5).

Countersunk recesses are prepared along the long sides of the planks and cut about half through their thickness (see A); into these the dovetails are forced, always on the inside of the hull. The butting joints of the keel planks are fastened together with large dovetails.

I venture to suppose that we should go wrong were we to assume that all boats of the period were built precisely as are the Museum specimens.

In the volumes before referred to on Beni Hasan, Part II, Plate XII, we see several boats differing in shape from those usually depicted. The hulls are deeper; the greater draught must have enabled them to take considerable cargoes. In such boats the method of joining plank to plank with long pegs instead of with dovetails—which pegs and dovetails are now replaced by long iron nails, clinched, may have been employed. But, on the other hand, it must be kept in view that a clumsy draughtsman may be very responsible for a difference between one hull and another.

None of the ancient drawings are to scale.

In constructing a great barge such as that which is depicted at Deir el-Bahri and capable of carrying two obelisks, each of them some 32·0 m. in length, the construction of the hull must have been a matter of great care and no little science.

Denied the help of iron, and without the command of a variety of long straight timbers; with the cross strains the structure must have been submitted

<sup>1</sup> In our own mediaeval carpentry we find magnificent roofs, held together entirely by oak pegs: for example at Westminster Hall.

to in getting the two immense monoliths on board; in taking the chances of running on a sand or mudbank on the way down the river, and finally in unloading; the hull must needs have been a really scientific combination of timbers. Whence came the large timbers? Are we at all justified in supposing that there might have been more science displayed in building a barge in the XVIIIth dynasty than in the XIIth?

We should bear in mind that long before the XIIth dynasty prodigious blocks of granite were brought down from the Aswân quarries for the Pyramids and for the temples at Saqqara.

As regards ship construction, it would probably be less difficult to support a great weight distributed over a large area, as in the case of obelisks, than it would be to support a similar weight concentrated, as in the case of a block, over a smaller area. It would seem impossible that dovetails alone could have held together the planks of the hull. The main strength of such a structure cannot have been merely in the skin, but must have been within, by making use of trusses and similar methods, clothed with the cleverly combined skin.

I may be pardoned if I make a short extract from a letter written me by the late Mr. Francis Elgar, Director of Naval Construction to the British Government. He says, "The two great obelisks of Karnak, 97 ft. 6 in. long, could be carried on a boat about 220 ft. long and 69 ft. beam, upon a draft of water of about 4 ft. 6 in. or not exceeding 5 ft." He was much interested in this question.

Some of the largest passenger steamers on the Nile approach this length but differ exceedingly in beam, they move on the river after its volume has considerably diminished; but except at the very crown of high Nile, a barge of 69 ft. beam and 5 ft. draft would present great difficulties in navigation. As we have already said, merely to construct a vessel of such beam and yet of so shallow a draft under the limitations which pressed upon the ancient Egyptians must indeed have been a difficult matter. Whence came the necessary knowledge, at what remote period did the people begin to accumulate the experience which culminated in their power to deal with immense weights, lifting them, transporting them, unloading them, and this not only in the XIIth or XVIIIth dynasties, but in the IIIrd or IVth?

It is not easy for those unaccustomed to deal with figured dimensions to realise merely by reading a statement of numbers of feet, how large a thing a barge would be, such as that mentioned by Dr. Elgar. Let me give an example. James Fergusson, in the monumental work, his *History of Architecture*, gives the following dimensions of Westminster Hall: 68 ft. wide and 239 ft. long. When we compare these with the dimensions required for the barge 69 ft. wide and 220 ft. long, we can realise what a serious business it must have been to build, to load, to tow, to navigate and finally to unload such a structure even under the best conditions.

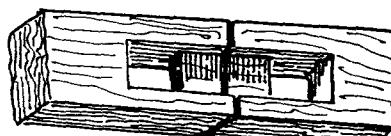
To return to the boat in the Museum, which would be of very light draft and not intended to receive cargo. The dovetailing has been already described (Fig. 5). There is, however, another method by which the planks were held together, more akin to pegs and perhaps more effective (see Fig. 5).

Sometimes one, sometimes two tongues of wood are projected from the plank above and driven down into holes made to receive them in the plank below. In one case the tongue is 0.20 m. in length, 0.08 m. in thickness, and 0.15 m. in projection.



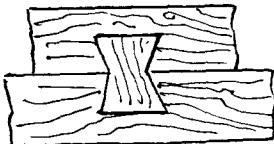
DOVETAILS

5



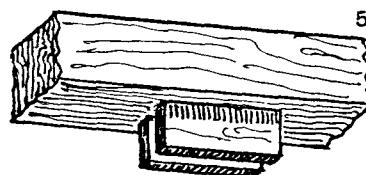
BINDING TOGETHER BY THONGS

6

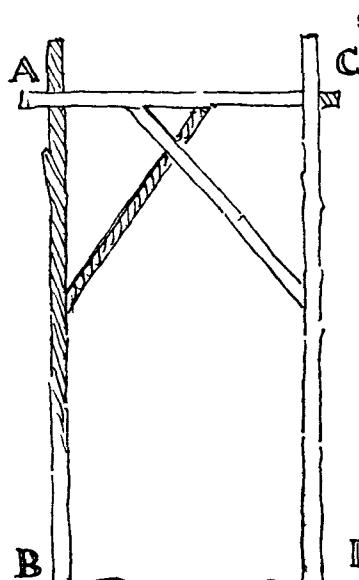


BOW

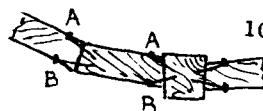
7

STERN  
POST

8

TONGUES DRIVEN INTO  
CORRESPONDING HOLES

9

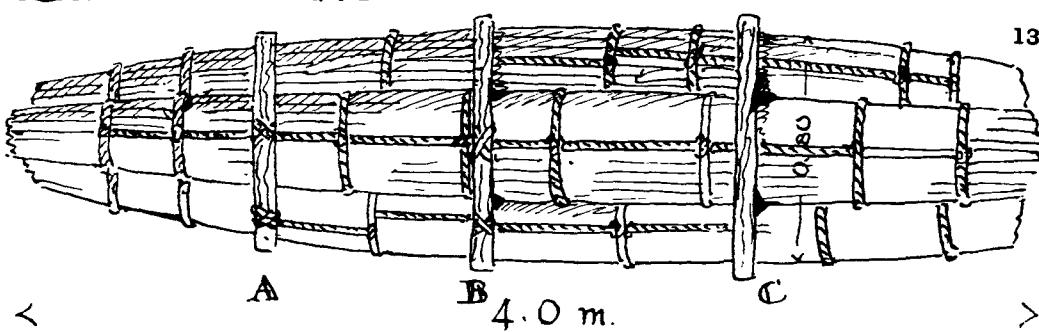


10

12



11



4.0 m.

The section of the boat (Fig. 1) shows that there is not, as we might have expected, a stout rim, or gunwale, forming a top rail to the hull (Fig. 6).

In this we see the ingenious method adopted by the boat-builders to tie together in their length the planks which form the gunwale—such as it is. No doubt a rope of fresh hide was bound tightly round the central tongue. The hide contracts in drying and in result an exceedingly close and strong junction is secured. The method is still made use of. The great yard of a dahabeah, usually made in three pieces and in length averaging more than 33.0 m., has the two largest pieces covered at their junction with a fresh hide, which, contracting as it dries and assisted by rope, withstands easily the great strain to which the yard is exposed under the tension of the sail. The yard of my own boat was fully 35.0 m. in length. This yard was on one occasion broken in half by the wind strain, but at the junction of the two heaviest pieces of the timber, one of which was broken, and which junction was fortified as usual by hide, no damage appeared.

It will be observed that the hull of the ancient boat is assisted to maintain its shape by eleven thwarts or cross-pieces, which are carried through the thickness of the skin of the hull and firmly fixed in position. They are visible from the outside. They support the deck planks.

A notable example of the way in which the thwarts were made use of in construction can be observed in the sculptures at the temple of Hatshepsut at Deir el-Bahari.<sup>1</sup>

On Pl. CLIII we see a considerable number of large rowing boats, which are being made use of to tow the barge which carries two obelisks. The ends of the thwarts are seen piercing the hull. On Pl. CLIV we see the great barge itself carrying the obelisks. The thwarts are in three ranges, one above the other, which is a proof that they formed most important members in the inner construction of this large hull.

In the case of the boats in the Cairo Museum, planks are laid, their ends resting on the thwarts and thus forming a movable deck.

This is a very usual method of forming a deck to-day.

At *AA* on the plan, Fig. 3, are indicated the places occupied by two posts to which the steering paddles were attached. Steering paddles—not rudders, as we understand them—are clearly shown on Pls. CLIII and CLIV *Deir el-Bahari* above referred to. The steering paddles were attached by ropes or thongs to the upper end of the vertical poles (see Pl. CLIV).

In the Museum boat there is no indication that they were provided with a mast. Had there been such we must find sockets on the centre plank at the bottom of the boat.

It is to be regretted that another illustration of boat building, in addition to that already referred to, is not known to us. Of boats already built and in use we have many examples. We must take refuge with Herodotus, who gives a short and not very illuminating description of how boats were built in the book *Euterpe*.

Of the passage in this book relating to boat building, various readings have been produced, none of them very helpful. Let us refer to that by Sir Gardner Wilkinson, *The Manners and Customs of the Ancient Egyptians*, new edition

<sup>1</sup> *The Temple of Deir el-Bahari*, by Ed. Naville. Part VI, Pls. CLIII and CLIV. Egypt Exploration Fund, 1908.

by Saml. Birch. Murray. Vol. II, p. 207. "The Egyptian boats of burthen are made of a thorn wood very similar to the lotus of Cyrene, from which a tear exudes called gum. Of this tree they cut planks measuring about two cubits, and having arranged them like bricks they build the boat in the following manner. They fasten the planks round firm long pegs and after this stretch over the surface a series of girths, but without any ribs, and the whole within is bound by bands of papyrus. A single rudder is then put through the keel, etc., etc." Wilkinson then gives a small woodcut (to which I refer the reader) which certainly does not at all agree with the Museum boat above described, nor with the way in which a naggr is built now. On p. 209 he gives a drawing of a boat the hull of which is constructed with thwarts as in the Museum specimens. None of the boats so beautifully sculptured in the reliefs at Deir el-Bahri, above referred to, suggest a method of construction such as that evolved from Herodotus by Wilkinson.

As I do not pretend to penetrate the mysteries of Greek texts, I have referred the question to my kind friend, Dr. Griffith, of Oxford.

He refers to a commentary on Herodotus by How and Wells, Oxford, 1912, Vol. I, p. 214. These commentators translate the passage in question as follows :

"The long bolts at frequent intervals were, so to speak, the string on which the short pieces were strung, they were driven in vertically to the layers." The words "string" and "strung" are not to be taken in the sense of tied together, but "attached," just as we find the word frequently used to-day. The bolts at frequent intervals were driven in vertically, as we see in the Museum boats.

If we may assume that the word "layers" should be taken to mean "horizontally laid planks," we find ourselves to be very near to some parts of the construction of the Museum boats, and also near to the method shown at Beni Hasan. Furthermore, we are very near to the method of construction as practised to-day, as we shall presently see.

Carey's translation is as vague as that of Wilkinson. How any boat can be "bound within by bands of papyrus," it is hard to say, but if the translator has put a wrong value on the Greek word and has translated as "bound" a word which should really be "caulked," he then describes that which is done to-day and must always have been done or the boat would not float.

The example of boat building before referred to from Beni Hasan (see Fig. 2) shows most clearly the planking formed of short pieces of wood and the vertical "butting" joints so distributed that, like bricks in a wall, no one joint comes immediately above the joint below. In this the description given by Herodotus is completely supported.

Seeing how fast many handicrafts making use of traditional methods are dying out in Egypt, it may be of interest to describe how I saw a naggr built in the year of grace 1911. The way differs not materially from the methods in use in the XIIth dynasty. I had the good fortune to see the business carried through under my eyes for the following reason. Sweet brotherly love does not always flourish between the inhabitants of neighbouring villages in Egypt. The two are very ready to fly at one another's throats. If harm cannot be done on a large scale it can be done on a small.

The noble and lofty principles inculcated by Mahomed are as thoroughly neglected as are the precepts of Christianity at home. There is the difference that the Egyptian is but emerging from the infamous misrule of the Turk; he

places but little confidence in the administration of the law ; he prefers to administer the law with his own hand. He begins with his tongue, his hands quickly follow, and violences are enacted. With us, happily, the law has a much greater power than in Egypt. We are forced to behave better.

In consequence of the above state of things and fearing that the wood, tools, etc., etc., might be stolen by way of revenge (no doubt the other side would call it justice), it was suggested that the naggr should be built on the river bank just below my house which, being at a considerable distance from the contending villages and having about it an aroma of the Government, there would be cast a halo of safety over both the materials and the operations.

I thus was introduced to some customs, more or less local, connected with carrying through the business which are not without their interest.

When it has been determined that a boat of this type shall be built, it is first necessary to select the builder, a craftsman who is classed amongst carpenters and confines himself chiefly to boat building. The carpenter, being instructed how many "dira" (yards) in length the boat is to be, agrees on a price. The "dira balady" or country dira is 58 centimetres in length = 23 inches.

The carpenter is paid at per "dira" of running length. Nothing is said about the beam of the boat or its draught. The carpenter carries in his head certain proportions of beam and draught in relation to length : a traditional system.

Judging by the clumsy tubs these boats always are, whether we meet with them at Omdurman, Dongola, Aswân or Assiût, we are justified in believing that the lines on which they are built are altogether traditional. A boat to take two masts is as clumsy in its proportions as a boat the building of which I am about to describe, taking one mast. The proportions differ materially from those of the boats in the Cairo Museum.

The naggr is built entirely for capacity. The draft and beam are, in proportion to the length, far greater than are those of the Museum boats. Of ancient boats there are countless models from tombs and as many drawings or sculptures upon the walls of tombs. In all cases there is shown a considerable part of the hull, both at the bow and the stern, out of the water. The difficulty of moving such a boat against a head wind must have been great (we have all doubtless experienced the difficulty in a gondola). The boats to convey merchandise, of which we see examples so carefully depicted in the Temple of Deir el-Bahri, are built on the same lines. The naggr of these days differs considerably.

In any case the existing form is evidently of very long standing. I would like to ask whether we are really justified in supposing that the models of boats in the Museums are at all correct. I do not believe that they are more than sketches. The same remark unquestionably may be made as regards the drawings or sculptures. They are symbols.

All students of Egyptology know the beautiful sculptured scenes on the walls of the Temple at Deir el-Bahri before referred to. The workmanship of the sculptor is so fine, so exact, and many details are set forth with such manifest accuracy that the impression at first received certainly is that here, at least, we stand before measured drawings : everything must be drawn to scale as in the drawings of an architect.

But the more the sculptures are studied, the more manifest it becomes that it is the method of delineation that produces the effect ; these beautiful works are, in fact, not to scale. Dr. Elgar told me he had come to the same conclusion as

stated above and more especially is this the case with the delineation of the great barge bearing the obelisks, and he gave his reasons which were, to me, quite conclusive, but are too long to state here and too technical.

To return to building what I will call "our naggr." There are sundry customs which cluster round the proceeding.

The carpenters go forth up and down the river to buy the wood. This is, very usually, in the form of standing trees, which are carefully examined in regard to the possibility of cutting them into useful and handy pieces.

We must bear in mind that none of the wood is artificially bent; all the curved pieces, such for example as the planks forming the bow, must needs be cut to shape by the skilful carpenter with an adze, and wonderful it is to observe the certainty with which he wields this instrument. With the saw also certain slight curvature is obtained. The wood, trees or planks, are purchased by the employer. All surplus wood brought upon the ground belongs to the carpenter.

The carpenter is, further, entitled to be fed by the employer during the progress of the works, and that not with ordinary everyday durra bread and such like, but pigeons, chicken and other luxuries must be provided.

The neighbours of the employer are also placed under contribution; they are supposed to consider that the building of a boat is a matter of interest and use common to all, so they frequently visit the work, consume a great amount of time in useless talk and bring as presents to the employer, but for the use of the carpenter, eatables of various sorts.

Custom further dictates that the carpenters (for in the case under consideration there were two) receive a complete outfit of clothes, such as people of their degree usually wear. When the boat is ready to be launched, the carpenters receive a second suit. Coffee is, of course, being freely administered to the carpenters and visitors during the whole time of construction.

The employer, in addition to the wood, has to find all necessary nails and bring them to the site.

The wood made use of is that of the *acacia Nilotica*, known on the Nile as "sunt," a slow-growing tree hard and close in grain. The tree can grow to a considerable size, but it seldom gets a chance. A stem of a metre in diameter is thought very large. After purchase the whole tree stem, large branches and small, is brought to the river side after being in part cut up to facilitate transport. Having arrived, the pieces of wood are scientifically sorted, all the timber to be used for the naggr being laid on the slope of the river bank, just within the water, so as to be kept always damp.

The carpenter brings his own saws, hammers, adzes and big augers, also a pair of gibbet-like affairs which are used with much craft to prop the timber for sawing. A spot having been selected close to the river side (it must be understood that the work is usually undertaken during the going down of the Nile: if the Nile is rising the spot selected is high on the bank, so near as to facilitate the floating of the finished boat) a sufficient piece of land is made level, the naggr being built parallel with the stream. Just north of it a little hut of durra straw is made to form a shelter from the prevailing north-west wind. In this the interested parties live until the work is finished, thus keeping watch over the materials and the progress of affairs.

Let us say that the naggr, when finished, will be 24 ft. long over all.

A straight line is laid down on the levelled surface of the selected site, by the aid of a piece of string, its direction parallel with the river, and on either

side of it, alternately, a small stump of a branch is fixed in the ground. In the meantime the keel, which is to rest on the before-named stumps, is being prepared.<sup>1</sup>

From small tree stems of a suitable size the longest available pieces are got: let us say three. These are, with the adze, worked smooth along the top. The two sides are dressed vertically but not very true: the under part is left rough and shapeless. The three pieces are halved together, drilled with the auger and mighty spiked nails procured from Cairo are driven in and clinched. The keel thus formed is placed on the stumps and is fixed to them by long nails.

It will be observed that in establishing a keel we have departed from the method of the Museum boats and it may be presumed, of the ancients, for neither in models nor wall drawings do we see anything that suggests a keel. As soon, however, as it was decided to make use of a hinged rudder and not of the steering paddle, a vertical stern post became a necessity. It must be presumed that with this change the keel also was introduced, as without that the stern post could hardly have been made firm at the bottom.

The carpenter now prepares the stern post. It consists of a straight piece worked square in section, by means of the adze, and halved at the bottom end to the keel. A spike nail or two is driven in, a fixing which seems very inadequate and indeed would be so were it not that by the method of building the hull every part of the structure assists in supporting every other part (Fig. 8).

The bow of the naggr is a more imposing affair than the stern. Having selected some knees from the wood lying on the bank, three curved pieces are cut and then shaped by the adze: they form when set together a somewhat imperfect quadrant. They are halved and nailed together in the way already described for the keel and the stern post, are quite neatly fitted, being finally dressed down with the adze after they are fixed in position (Fig. 7).

Where the curved pieces for the bow start upward from the keel, the bottom piece projects downward below the keel some four inches or more.

I could not ascertain that the carpenter knew why he made it thus. It seemed with him a matter entirely of tradition, but one can imagine that long since the advantage of such a projection was observed. When the keel strikes upon a sand or mud island, the projection would make a groove in the yielding surface, through which the keel would more easily follow.

Before the stern post or bow are permanently fixed, a piece of string is procured, also a piece of red ochre, which the sandstone hills in Upper Egypt provide so liberally. It is called "moghra." The ochre, in water, provides a red sediment: this is the pigment in which the string is soaked. The string is held along the middle of the upper surface of the keel and then plucked. The ochre is thus deposited in a straight line. In the same way straight lines were made, both vertical and horizontal, in remote times, as hundreds of tomb interiors still show.

By eye the stern post and rib for the bow are set up, a string is stretched from the top of the one to the top of the other, and by means of a plumb bob made of a heavy nail and a piece of string, the centre line or axis of the hull is established.

It is not a little fascinating to watch these effective but primitive methods being put into operation. Excepting in the presence of the iron nail, there is not one of these methods that by a study of the ancient drawings and buildings we cannot see to have been in use four or five thousand years ago.

<sup>1</sup> In Fig. 2, from Beni Hasan, we see the sticks set up so as to keep the hull in its place.

The Egyptian knew how to execute work, when he was called upon to do it, which in its perfection has never been exceeded, as, for example, the external masonry of the Great Pyramid. Except in some of our finest metal work of to-day, screw gauges and things of that sort, we never approach it. What absolute precision and mastery over the most stubborn materials, what fineness of modelling of the mouth and cheeks of a statue did he not attain ! We are still at a loss to know with what means he reached this perfection.

In other pieces of work where such accuracy was not required, he worked in a manner far more rough and undoubtedly the handiwork was, for the most part, guided by the eye alone.

The naggr we are now engaged upon comes under the last category. When one tests what the carpenter has done by a twentieth century standard and observes the tools and methods made use of, one is not a little astonished how so considerable a degree of correctness has been arrived at. On the other hand, a naggr of but a few years old wears an aspect of hoar antiquity.

Worked, as all the surfaces have been, by the adze, the surfaces being without pitch, tar, paint or varnish, they acquire a silvery hue and distinctive texture that wood from the saw or plane never gets. The rudder, although not belonging to the old order of things, is so rough in its make as to suggest a fragment of an old barn door, whilst the sails are usually the worse for wear.

The bow, stern post and keel connecting them standing complete, a little flag bearing the name of Allah is set up at the highest point of the bow and remains there during further building operations.

A reciter of the Koran, for a consideration, also attends occasionally : it is furthermore helpful to the success of the operations that pious and complimentary remarks should freely be made.

The large saw already mentioned as brought by the carpenter now comes into work. A trunk of tree, after the adze has reduced it to a section more or less square, is marked with slightly curved lines, more or less parallel. This is done by means of the string charged with "moghra" (red ochre) which is held by one of the carpenters in short lengths of perhaps 9 ins., and then plucked. The direction of the string is slightly changed after each plucking until, at last, a long line somewhat curved is clearly marked.

We now come to the erection of the sawing frame. Two fairly stout branches, selected from the stock of wood, have been set vertically, their ends buried deep in the alluvium of the river bank ; a cross piece joins them at the top, they are firmly roped together. The piece of a tree to be sawn is tilted up against the cross piece. The "gibbets" above referred to are placed under the other end of the piece to be operated on. The diagram Fig. IX shows how the gibbets are used.

A, B and C, D are roped together tightly. The trunk or log to be sawn extends from the cross piece first described and is rested on the cross piece of the gibbets A, C. The whole affair, ricketty as it appears, keeps steady. One man stands on the trunk or log to be sawn, the other stands below. A handy saw-pit is established but without the pit. The contrivance can be set up almost anywhere.

The sawyer below observes the curvature of the red ochre lines which are above him ; directing the saw along these lines, three or four stout planks are produced to the shape intended.

In the case I am describing the planks were about 4 ins. = 10 cm. thick and as long as the trunk or log would permit.

Sundry planks, some 2 metres long, were obtained which were used for the bottom of the hull.

The planks are not nailed down on to the keel, but fitted against the sides which, as we have said above, were got to shape not by sawing but by the adze. The keel projects, when all is finished, but little below the skin of the hull.

It may be supposed that by the somewhat rough method of work above described, the sides of the keel are not very true. The difficulty is got over in the old Egyptian manner, as it was done by the masons. The piece of material to be set in place is fitted to the irregularities of the piece already established. None of the keel is cut away.

The way in which the adjustment of the planks to the keel is made is as follows. The sides of the keel are painted with a liquid mixture of Nile mud. Before this is quite dry, the plank to be adjusted is held in position against the mud paint. Where that paint comes off on the side of the plank, the discoloured surfaces are dressed away, very deftly, with the adze; the process is repeated until the two fit very closely. The same process is repeated for all the joints throughout the hull.

The ready way in which the demands of the eye are responded to by the skilful hand is delightful to watch.

The plank, ready for fixing, being held in its allotted position, the carpenter arms himself with a small paint brush made from a piece of fibrous stick chewed at the end.<sup>1</sup> He dips this in the red ochre and marks the places for the nails (see Fig. X, A.)

A straight mark and a small circle indicate that the nails are to be driven in from above at A. or below at B, which when the hull is complete will be A the inside, B the outside (Fig. 10). The plank being set up edgeways on the ground, the holes for the nails are bored with a large auger. In this respect we have come away from the ancient dovetails but are not removed far from the pegs. The necessary curvature of the planks is gained entirely by the adze. This statement applies to those of less than two metres in length, which were in most cases sawn as before described.

The nails are of wrought iron, not very hard, tapering in form and with large mushroom heads: the nail must not be so stout that it cannot at the small end be bent over with some ease, as all nails are clinched.

In some cases a recess is prepared as at A, Fig. XI, giving greater facility to drive the nail diagonally into the next board B.

There are, near the top planks of the hull, pieces in the nature of thwarts set across from side to side and carrying a boarded deck. Quite half the area of the hull is thus covered in and the rigidity much strengthened thereby. Across the hull, just about the middle of its length, is fixed a stout beam, usually made from the stem of a tree, smoothed with the adze, but following all the inequalities of its shape. The thwarts above named are passed through the skin of the hull and are visible on the outside. The stout beam or tree stem is for making steady the short mast which has a socket in the keel and a strap or other form of stay to secure it to the beam.

The wooden structure of the naggr is now complete. The next duty is to enable it to float.

<sup>1</sup> See *Visits to Monasteries of the Levant*, by the Hon. Robert Curzon. Murray, 1850, p. 96.

We are accustomed to boats being caulked from the outside, but in the case of the naggr we find the same method employed as mentioned by Herodotus, the caulking is done from within ; but instead of "byblus" old clothes are preferred. There is a great merit in this system. To caulk a hull as we do it, the boat must be on land and attacked from the outside, but in the case of the naggr the traveller remedies the leak as he travels along, which indeed I have assisted in doing.

The proprietor sacrifices a strip of his "gallabea" or "camesa," or by preference, a piece of the traveller's clothes. This is vigorously pushed into the crevice, with the result that the boat becomes remarkably water-tight. This method of caulking adds to the ancient and ragged appearance of the hull. Little bits of rag are seen fluttering on the outside.

In these days the carpenter occasionally fortifies the hull by a few ribs, but these are in no way parts of a system attached to the keel, but are fixed to the interior of the skin, giving a little extra strength where the builder thinks it desirable.

The sail is always latine.

The naggr has now to be set afloat, but this is not a great piece of business —any inequalities in the surface of the sloping bank left by the retiring waters are smoothed down. The boat, its long axis parallel with the stream, is eased down first at the bow, then at the stern, and so it wriggles its way until at last it is afloat : imperfections in the caulking are made good ; the mast and cordage are set up, the sail is attached, and the new naggr at once takes its place amongst the antiquities of Egypt.

A study of what has been said shows that, as a matter of fact, the naggr of to-day must be a very direct descendant of the boats built some thousands of years ago, with the method of construction but little changed.

The saw plays a not very prominent part ; pegs and dovetails have given place to iron nails. The adze is now as it was long since, the most important cutting and shaping tool. Steering by a paddle has given place to steering by a rudder.

The progress of this type of boat, primitive as it is, depends still almost entirely on the sail, punting with a "midra" or long pole is still, as it always was, universal. The oar, when it is used, is no more than a bare pole, cut a little flat at one end.

The paddle, like the crocodile, has entirely disappeared between the sea and the Second Cataract. At Kareima, however, close to Gebel Barkal, just below the Fourth Cataract, I have had the pleasure of being propelled in the ancient manner as we see it in the models and on the wall sculptures. The side of the naggr in which I was travelling rose to exactly one metre above the water. Through a loop of rope, twisted round a thwart and projecting outside the naggr, was passed the shank of the paddle.

The loop acted as a rowlock. The paddle consisted of a fairly stout stick some two metres long, and at one end was fixed the blade (Fig. XII). The blade was tied to the shank. The paddle was used nearly vertical. Observing how the Kareima people used it, one understood the ancient models in the Museums with the extreme verticality of the paddles as there to be observed.

When in a swift stream additional strength was required, two or more men pulled at a rope attached to the paddle shank immediately above the blade, and thus, drawing the paddle towards them they very much augmented the force of the man who held the paddle.

I ask permission to insert the following from *Across Asia Minor on Foot* by W. J. Childs, Blackwood. I take the paragraph from the *Spectator* of March 3rd, 1917. It seems to me of peculiar interest as it shows that, if we go to the right place, we may see an ancient type of boat on the sea at the present day, square rigged:—

“A sight of this kind I watched one summer evening on the coast of the Black Sea, when a long boat, whose bow was shaped like a swan’s breast, put off from the shore. Her stern projected above the hull and was curved into a form resembling roughly the head and neck of a bird preparing to strike. Upon the mast, hanging from a horizontal yard, was set a single broad square-sail, and under the arching foot could be seen the black heads of rowers, five or six men on either side, and a bare-legged steersman placed high above them in the stern.” Mr. Childs sees in this, with great reason, the direct continuance of Greek tradition. May we not go further back and see the picture of this very ship in many an Egyptian tomb of far greater antiquity?

There is yet one more machine for floating on the Nile which, exceedingly primitive as it is, is still in very general use. It is called “ramus.” It is more than a raft which is merely a float; it is shaped to a certain extent and can be propelled, indeed it usually is so, by an imperfect paddle.

The ramus will take at least two people. It is made of boose—the straw of durra, which grows to a length of two, or two and a half, metres. The boose is tightly tied into long bundles, circular in section, diminishing towards one end, the bow of the machine. Three or more sticks, A, B, C, Fig. XIII, are tied across, so as to keep the structure steady. The largest of these sticks are 0.80 or 0.90 m. in length. I have measured the length of several of these ramus, all about 4 m. It is not curved upwards from the water at the bow end. The whole thing is made very rigid by being roped together, as shown in the sketch. A view of the fishermen working from these floats is given in the *Journal of Egyptian Archaeology*, IV, 255.

The passenger propels himself with a paddle made of a short piece of stick and a piece of flat board at one end. The thing is primitive but sufficient.

The ramus is much in use when cultivable islands appear above the retiring waters of the Nile.

SOMERS CLARKE.

[The old-fashioned ship-building in England was not so very different to the Egyptian method. “Stocks.—A frame erected on the shore of a river or harbour whereon to build shipping. It generally consists of a number of wooden blocks, ranged parallel to each other . . . and with a gradual declivity towards the water” (*Encyclopaedia Britannica*, 1797). Had we the facility of a rising river to float off our shipping, no doubt the methods would have been still more alike.—F. P.]

34910

## REVIEWS.



*Estudio de Arqueología Cartaginesa. La Necrópoli de Ibiza.*—ANTONIO VIVES y ESCUDERO. Madrid, 1917. 8vo, 189 pp., 175 figs., 106 pls. (Junta para Ampliación de Estudios, Moreto 1, Madrid.) 20 pesetas.

This is a noble work of collecting materials for the “extension of study”; though based on the very varied contents of the Iviza Museum, all kinds of collateral materials from Carthage, and some other sites, are brought in, and briefly illustrated by sketches for comparison. The plates,  $7\frac{1}{2}$  by  $4\frac{1}{2}$  ins., are all photographic, fine-grained half-tone or collotype, bright and clear. Unfortunately the industry of the author has had indefinite material to work upon. The Iviza Museum appears to be a chance collection without any scientific data; not a single tomb-group, or association of objects is in evidence, not a single dating is known beyond what may be guessed from appearance. It is of the “curiosity” stage, like the Naples Museum, where no localities or groupings are stated. What might be done in a single season’s work by an archaeologist who knew the dating in Greece and Egypt, would be worth all that is yet known and collected. In the absence of any dating, it is only possible to note comparisons, which we here do on the Egyptian side.

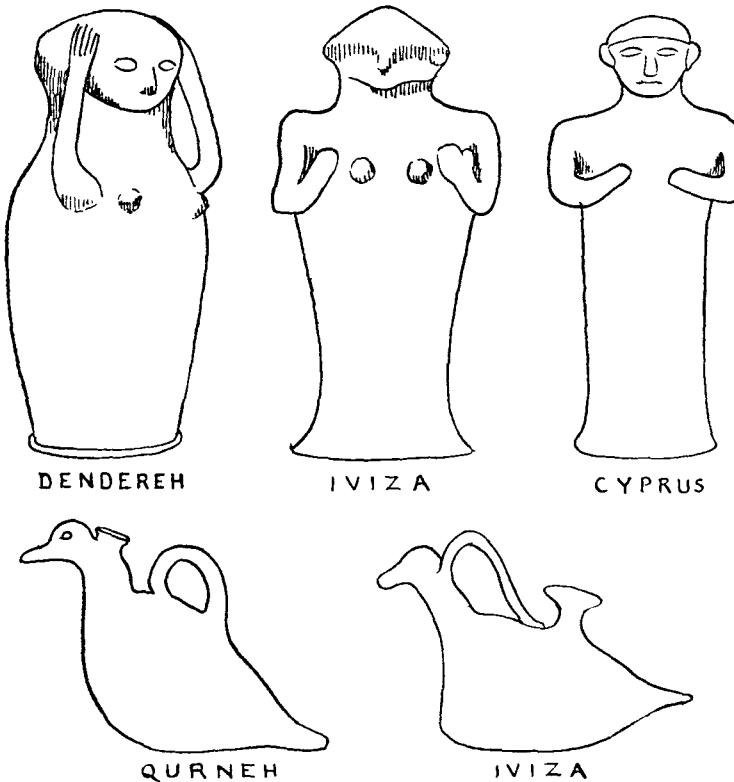
The earliest contact with dated material is in the curious pottery made on a wheel, open below and finished off with head and arms above. This style of figure is known from a tomb of the XIth dynasty (*Dendereh*, XXI); also similar figures with hands to the breast from Cyprus (Cyprus Museum 5501-5542, Sandwith Collection). Seeing how little is found in Iviza before the Carthaginian period, it is very unlikely that such figures are of the XIth dynasty age in Spain; nor are they indigenous in Egypt. They seem to belong to some centre—such as Cyprus—whence they were brought into Egypt in the XIth dynasty, and into Iviza perhaps a couple of thousand years later.

Probably a similar connection accounts for the resemblance of the bird vase (*Qurneh*, XII) of about the XVIIth dynasty, and the similar bird vase from Gades (*Estudio*, XLVII, 4).

There is perhaps an echo of the early prehistoric Egyptian style in the bone spoons with circular bowls, and the long hair pin (*Est.*, XXX, 7-9, 1); when the close relation of the pottery of that age to the modern Algerian is considered, there is no improbability in a style of ivory work lasting on in North Africa, and passing thence to Spain, long after it ceased in Egypt.

Another similarity is in the multiple vases with Hathor head and cow’s head, found at Carthage (*Est.*, p. 130), and the group of vases with the cow’s head and disc, from the deposit of Tehutmes III (*Koptos*, XIV, 7). The Carthaginian is also evidently related to the multiple vases on a ring as found in Egypt (*Abydos* III, XVI, 4) about the XVIIIth dynasty, and known in Asia Minor rather later. This type is foreign to Egypt, and may have been brought in there

at an earlier date than it was borrowed in Africa. All of these resemblances therefore indicate trade in common with centres of production, but not necessarily equal dates.



The case is different when we reach the XXIIIrd dynasty, the early period of Carthage. Jars of this period are well known in Egypt (the parallels here are the nearest published, but others are closer), and are the same as found in Ibiza and very common in Carthage (*Est.*, XLIII, 21-23, p. 118). The glass vases with variegated bands of colour found in Ibiza (*Est.*, XXXII) are all of the later period of such glass, well known from the cemetery of Cumae, and generally assigned to the ninth century B.C. The glass beads, coarsely made of varied colour (*Est.*, XXXIV, 1-7) are common about the eighth century B.C. in Egypt. Cylindrical beads of coloured glass covered with knobs (*Est.*, XXXV) belong to the same factories and period. A cowry of glazed pottery from Carthage (*Est.*, Fig. 84) has the cartouche of Shabaka of the XXVth dynasty. Thus before the familiar Greek age of the XXVIth dynasty, there are plenty of connections with the remains known to be of the ninth to the seventh centuries B.C. ; but there is no direct connection before that, only joint borrowings from uncertain third centres of trade. The conclusion seems clearly to be that it was the Carthaginians who brought Egyptian things westward, and it was not until the Phoenicians had established the western connections that anything was regularly traded from end to end of the Mediterranean.

In the XXVIth dynasty the Egyptian products and influences were common. Glazed pilgrim bottles with new year wishes are found at Carthage (*Est.*, Fig. 78); circular mirrors (*Est.*, XI, 1, 5); triangular arrowheads (*Est.* XV, 4, 5); alabastra (*Est.*, Fig. 62) found at Carthage; a finger-ring (*Est.*, Fig. 50) as found in Sardinia and Carthage; a glazed ball with an uzat eye (*Est.*, Fig. 83) and scaraboids with a human head (Fig. 77), both from Carthage—all of these show the general spread of Egyptian things westward in the seventh century.

The usual little glazed amulets became familiar, and coarsely copied, in the West. That glazing was actually done at Iviza is probable from the occurrence of a lump of little balls of frit (*Est.*, XXXIV, 27), exactly such as were produced in Egypt, for the glaze factories to employ in making blue glaze. Perhaps, however, this may have been for making blue paste amulets; anyhow it shows manufacture of amulets locally. A square amulet of bronze from Carthage (*Est.*, Fig. 58) shows a Phoenician adaptation of Isis and Horus, distinguished by the moon and sun respectively.

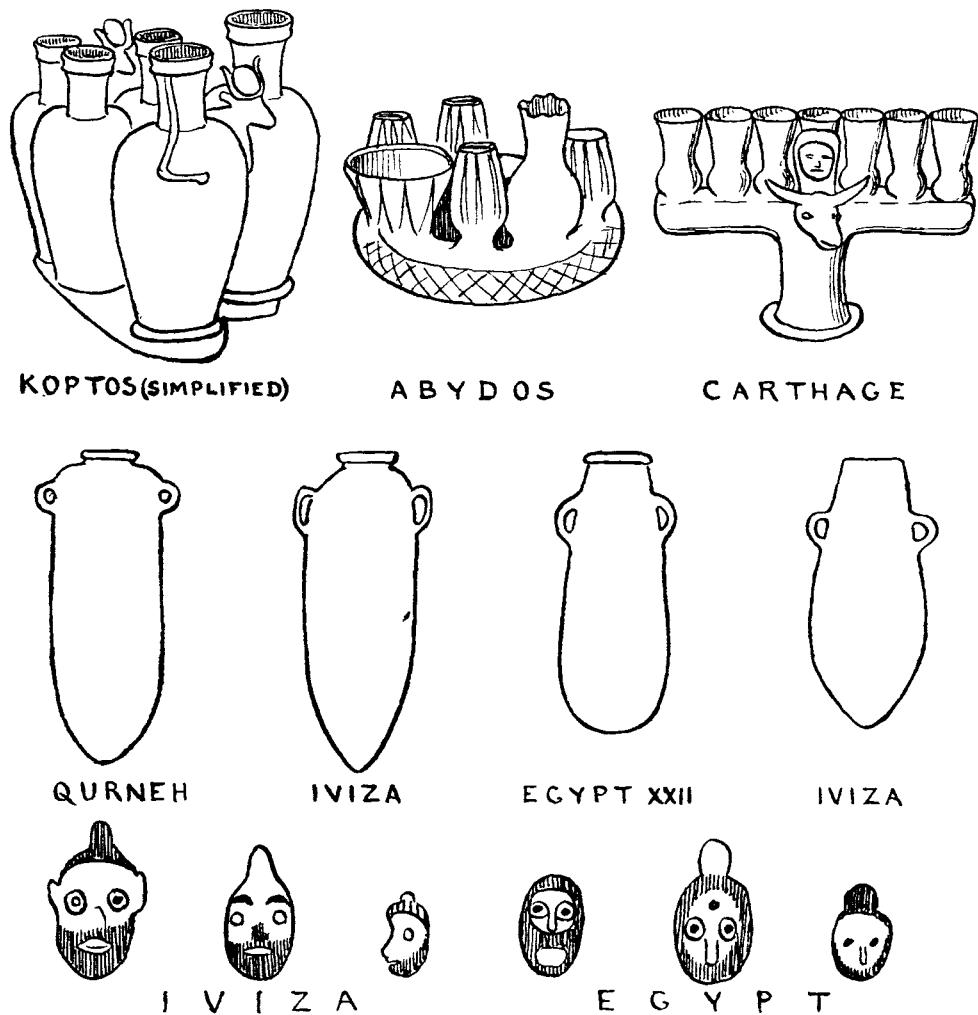
Coming later, the series of lamps runs through all stages—as at Naukratis—from the cocked-hat type of a flat pan folded over into a spout, through the central pivot-hole type, to the closed-in top, and then the addition of a side handle. There seem to be very few of the types with figures, only the two cupids and negro's head; and there are none of the multitude of frog or palm types which abound in Egypt in the second to fifth centuries A.D. This seems to show that Iviza decayed after the first century, and ceased to import foreign goods, however common. There is no trace of the Byzantine types of lamps, so frequent at Carthage and in Sicily.

Of purely Roman age there is not much. A square metal mirror (*Est.*, XI, 4), some box handles (XVII, 3–6), a glazed dish with lions on the edge, from Carthage (Fig. 82), some bone hairpins (XXX, 10–14), little figures of cast glass (XXXIV, 20–23), and what may be a surveyor's mark, like those found in Egypt (Fig. 36), are all of them early Roman rather than late. Knowing how flourishing Carthage and Spain were in late Roman times, it is strange that more does not appear in this volume. One single earring from Cadiz, seems to be of Byzantine age (Fig. 17). The only conclusion is that purely Roman work had so completely driven out local or national style, that nothing remains but entirely Roman material, which the author has rightly discarded from a work dealing with Carthaginian archaeology.

Some good plates (XLII–XLIII) are given of the “indigenous pottery.” This differs from what we know of the Italian, Greek or Egyptian. How far it may be in common with the Algerian or Spanish is not settled. Of the Carthaginian forms drawn there is but one which accords with the Iviza forms. The most peculiar products are the large masks of pottery, about 6 to 8 ins. high, mainly from Carthage, but also from Sardinia and Iviza. These have no descent from the Greek Silenus and other types; they can scarcely be intended as merely comic absurdities, and rather suggest a use in regular plays or performances. If Carthaginian literature had survived we might have seen the clue to these.

The great characteristic of Spanish work in all ages has been a fulsome spread of ornament. The terracotta figures are examples of this, with headdress and tunic covered with rosettes and spirals (*Est.*, LXXXV, LXXXVII, 1; LXXXVIII, 3). This taste is what renders the mediaeval architecture of Spain so fatiguing in its details to those bred in plainer styles.

Some of the terms used here in classification are hardly exact. The scarabs named Mykenaean are by no means so early; those called Egyptian are all Phoenician imitations; the scarabs of so-called Assyrian style are rather the Persian edition; and those termed Carthaginian are mostly local variations of Greek design. The figure called neo-Punic (XCVII) seems rather to be pure Greek in a local school, probably Cyrenean.



The general position then seems to be that there was little intercourse of the East with the Western Mediterranean till after the Trojan war; the traditional drift of peoples westward after that, in the reputed Trojan colonies, and the foundation of Cumae in 1050 B.C., began the movement which the Phoenicians carried on, and it was their trade that spread the taste for copies of Egyptian work. Scarcely anything of Egyptian make was traded West (the bust of Sekhmet, *Est.*, VIII, 2, is about the only piece), but there was a wide field for the Phoenician imitations, in scarabs and glazed ware, which flooded the trade, much as Naukratite imitations spread in the seventh and sixth centuries. Then after the Roman conquest there was a great collapse, and what little life remained in Carthaginian regions was completely dominated by Roman works.

*The Tomb of Senebtisi at Lisht*.—By A. C. MACE and H. E. WINLOCK. 4to, 132 pp., 35 pls., 85 figs. New York, 1916.

At last we welcome the first volume of the results from the Expedition of the Metropolitan Museum of Art at New York, begun ten years before. The scale and style of the present volume is delightful, but if one tomb claims such treatment, will the life of the explorers suffice to bring out the results of ten years? *Respic finem* is a motto which seems to be forgotten by most excavators. They scarcely regard the fact that no one else is likely to find time to work up and publish their discoveries, if they do not find time to do so themselves. Whatever a man does not issue of his own work will probably never be seen, and might as well have been left undone. It will be useless to science, and lost to sight, like the plunderings by the European consuls a century ago.

This volume is a complete account of a burial of the XIIth dynasty, which had been attacked anciently, but was saved owing to the plunderers being interrupted before much mischief had been done. The chapters deal with the general conditions, the clearing of the tomb, the coffins, the jewellery, the ceremonial stores, the pottery, and the dating. The oblong pit, large enough to lower a coffin, and about 16 feet deep, and the narrow recess chamber, are all of the usual type, like dozens of such burials in any Middle Kingdom cemetery. The great value of the account is in showing what a complete burial contained, and explaining the former contents of hundreds of similar tombs now empty.

Over the coffin, far from the loose rubbish that had fallen forward into the chamber, there was a pile of bricks and stones. This seems to have been placed there by guardians of the tomb, to cover over the attempted attack on the coffins by the plunderers; the same careful hands had filled up again the plunderer's hole down the shaft. The coffin had been considerably decayed, but the original decoration was carefully preserved by treating it inch by inch with shellac or with paraffin wax. On the outer coffin were inlaid eyes of alabaster and obsidian. This coffin was of the usual rectangular form, with raised block ends and rounded top, such as began in the third dynasty. Around the edges were gold strips, and down the axis of the lid an inscribed band, naming two women, Sät-Hapi and Senbtas; there is no explanation of the occurrence of the first name, or whether these were two names for the same person, as was often the case for men.

The careful tracing of the arrangement of the bead girdle, the collar and other parts of the outfit, has added much to our stock of information. It is an irony that the minute record of a much damaged burial should be worth more than the accounts of the perfect burials found by incompetent diggers. The detailed discussion of the coffins and fittings, compared with those from other important tombs, makes this volume a text-book of the subject.

The inner coffin is claimed to be "the earliest definitely datable example yet known" of the anthropoid coffin. Two questions are involved here. First, the style of the decoration of bead collar and tresses of hair (frontispiece and Pl. XX) seems to be far removed from a starting point. The similar form of the spiral at the end of the tresses and the marking of the breasts, shows that copying had gone on long enough to lose the original idea: the formality and want of attachment of the rectangular beadwork below the collar, again, is evidence of repeated copying. Second, how early is this coffin? Unhappily the evidence of date is not given: it is only stated (p. 114) to be "dated with great certainty to the early part of the XIIth dynasty," and to be connected with "the great wazir

in whose tomb she was buried" (p. 49). Sometimes relatives are buried in a family tomb considerably older; and here it is agreed (p. 32) that the technique and appearance of the coffin of King Hor is identical with this. Such resemblance takes us to the end of the XIIth dynasty, or more probably into the XIIIth.

This question of date is important as affecting a whole class of pottery. The application of white edging or stripes is well known, and is usually dated as after the XIIth dynasty; occurring here, it is claimed as beginning early in the XIIth dynasty. The styles in this burial which do not agree with what is usually dated to the XIIth dynasty, are stated to be due to belonging to the ruling class, whose fashions were not yet generally copied. We need very certain proof before we can thus formulate a difference of fashion of several generations between the styles used in different classes of society. Such social viscosity has not yet been proved in other periods; within a generation or two copying—however cheap or rough—takes a new style through all classes.

Let us hope that workers will devote their energies to publishing all their results, even if less luxuriously than in the present volume. No one ought to be allowed to turn up more material who is three years behind in publishing.

*Études sur l'Origine et le Développement de la Vie Religieuse. I. Les Primitifs, l'Égypte, l'Inde, la Perse.*—RICH. KREGLINGER. Bruxelles, Lamartin, 1919. 12mo, 370 pp. 6.50 frs.

This work is primarily written from the point of view of the study of recent peoples. It gives nearly half its exposition to these, then long sections on Egypt and India, and a shorter part on Persia; "the other great religions, including Christianity, will be studied in subsequent volumes." If all the work is similarly carried out, it will be a most welcome text-book. The present volume is clearly arranged, well written, with logical development and sympathetic treatment. It aims at reaching the point of view of the primitive thinker, and realising the aspect of life as seen by those who are without our accumulated experience. It is well documented, giving a reference for almost every statement, and quoting important passages in full.

In the first part, on primitive ideas, realism is first considered, concluding that "savages do not think or perceive as we perceive and think; with the more complex kind of life, experiences are multiplied and individualised, knowledge is widened, all the state of mind and mentality expands." To the savage mind impression constitutes reality, dreams are as real as waking impressions, drawings or statues are the equivalent of the bodies which they represent, the name is of the same effect as the person, and may give control of the person, the word of command creates the object or directs it. Magic rites are next described: of war, hunting, rain and sun. The basic idea of all these, is that man can control that which is beyond his reach by imitative actions. Under the head of Materialism are collected the instances of eating powerful men—enemies or friends—in order to acquire their abilities. The bones of oxen placed with the dead in Egypt are taken as being likewise to provide strength; but as goats and other small animals are also buried, and offerings of bread and drink, it is more likely that the ox bones are also part of the food provided. The transference of sin or disease to an animal is also quoted from many lands. The possibility of telepathy and sympathetic influence is fully accepted, and examples are quoted of physical contact in teaching and conferring powers.

A full and important section is that on *mana*, or the pervading influence emanating from sacred objects and *tabu*. This influence can be transferred, and the rudest sense of it is as a fluid or wind which passes from the possessor to the recipient. The notion is found in Australia, Borneo, Annam, New Hebrides, Madagascar, South Africa, and North America; it also lies at the root of Brahmanism. It should be added that this was familiar also in Egypt as the *sa*, or power, which was imparted by the god laying his hand on the back of the kneeling ruler. There was a class of *sa*-priests, who possessed this influence and imparted it. The essential value of it was protection by the gods, literally "backing," as *sa* was the "back" as well as the "influence." All kinds of objects may contain *mana*—stones, fire, wind, mountains, trees and weapons. The Dionysiac rites, and the eating of sacred animals, are parts of this system. The next section deals with the rites of contact with the earth, of fertility, and the marriage system.

Totemism is a valuable section, comparing and criticising the various definitions of the subject. The conclusion is "totemism is a belief that, in a society, certain persons or clans are connected, or identic, with species of animals or vegetables; and it implies all the rites resulting from such a belief." It is remarked that nearly always a whole species, and not a single animal, is the totem. Here Egypt helps us by the names of early animal divinities being all in the plural, *khnumu* rams, *anpu* jackals, *bau* herons. The animal standards of tribes in Egypt, from prehistoric times, later fixed as the standards of the Nomes, seem to be on the same footing as the animal standards of the Hebrew tribes and of the various peoples in Italy and Greece. The eating ceremonially and rarely of the sacred animal is a rite of totemism, in order to maintain the bond of unity with it: to the examples quoted may be added that of the annual eating of the ram at Thebes, and the eating of the Apis bull at Memphis, of which only fragments of bone were left to be buried, in some cases. Some interesting points of primitive thought are quoted, showing the savage, like the child, disregarding his individuality and thinking and speaking of himself as a part of the species; this further may throw light on the aspect that animals bear to each other. "The social institutions of the present world find in these fundamental characters of ancestral mentality, their distant explanation, and often their sole justification."

The second part, on Egypt, deals with the soul, the king, and the gods. Here the author follows the view that the disseverment of the body was for fear of its return, and he calls it an act of impiety. This view, true in some countries, never was a motive in Egypt. The dead were often provided with weapons, unbroken and effective, proving that no dread of their action was felt. Moreover, after dissevering the body and cleaning the bones, they were carefully re-constituted in their original order. To prevent any action they would have been left in confusion. In the early texts it is stated that the body was cleaned in order to prevent decomposition, and to preserve it. The funeral prayers do not pray that the head may not be removed from the body, but that it may be returned to it, and the bones replaced; this shows that the unfleshing of the body was not looked on as impious, but as part of a needful ritual of preservation. It is not the fear of division that prompts these prayers, but the fear of not being rightly re-united. The old idea is repeated that the contracted attitude of burial was embryonic; there is no ground for this, as the attitude is that usual in sleep, and the dead were merely wrapped together as they lay in order to

bury them. The dynastic people brought in full length burial, and that is the usual attitude of sleep among the Egyptian peasants in modern times.

A curious statement is given, without reference, that the Gizeh Sphinx was faced by another on the east bank of the Nile, forming a guardant pair to the entry of Upper Egypt. This needs to be verified, as it would clear up the meaning of the Sphinx, if correct.

The division of the hieroglyphs of animals, at the legs or neck, is supposed to be intended to prevent their injurious effect on the dead. This will not account for the removal of the feet of the harmless birds, which seems to show that mutilation was to hinder the animals from moving.

The earlier type of the ushabtis, as single figures of the deceased, is ignored, and only the later modification as servant figures is stated, though that did not begin till the XIXth dynasty. The idea of giving one for each day of the year was a late view in any case, and only rests on one or two having days named, which may be the day of death or of burial.

The *ka* being the family spirit, of which all descendants partake, is briefly stated; but the African belief in the same family spirit should be quoted, as it is the strongest evidence of such a view.

In describing the gods, the local origin and worship of each is well enforced, and their local and tribal origin might be further illustrated by the compounding of gods together when different tribes were mixed. A worthy summary of the great advance of Akhenaten concludes this part of the work. The usual well-fixed lines of Egyptian belief are stated, and need not be repeated here, beyond the matters just named, which require further consideration.

The third part, on the Religions of India, is a clear and well-arranged historical account of the changes that can be traced. Several long extracts give authoritative statements of belief. The gods of the Vedas and their origin are fully discussed. Next the system of Brahma, and the philosophical subtleties into which it developed. Lastly, the revolt of Buddhism, and the new morality and philosophy which it brought in.

The fourth part treats the kindred development of Zoroastrianism in Persia. The essential of this is the duality of the conflict of good and evil, which pervades the deities, the spirit world, and the actions of men. The date of Zoroaster is discussed, concluding that it cannot be later than about 1500 B.C., and that the movement originated in the Aryan homeland before the Hindu invasion of India. Though so closely akin to Hinduism, it reveals a violent antagonism in the opposite characters of the spirits. The Asuras are the good spirits in Persia, evil in India. The Devas are the evil spirits in Persia, the good in India. Indra is the great god of primitive Hindus, Andra is the worst of demons in Persia. Varuna the god of heaven in India is the demon of luxury in Persia. Vata, whose wind is the breath of life in India, is the demon of storm, snow, and destruction to Persia. "The religion of Zoroaster is one of the grandest doctrines which have ever been conceived, and which shines not only by the depth of the principles which the prophet discovered at the base of the world's evolution, but also by the admirable vigor of logic by which he subordinated all the details of his morals and eschatology to the first principles." After describing the struggles of good and evil for the possession of man, "We find thus in the religion of Zoroaster a grand conception which is not met with either in the Egyptian beliefs, nor in the profound speculations of the Hindus. The world has a history, it obeys the laws of evolution which from its present state lead it to an ideal

stage toward which are tending all the forces that move it. Neither in Egypt nor in India is the world conceived as progressing or developing ; each man only thinks of his own future—his own survival or annihilation—and the happiness which he seeks either in Paradise or Nirvana is only a distant future which he waits to realise. . . . For Zoroaster the world obeys a plan, it is in historic growth, a field of battle where a passionate struggle is waged between opposing forces, . . . the eternal and unquestionable opposition of good and evil, with one only hope—that of the victory of the good. It is on this foundation, solid and simple, that his entire morality rests."

This little book, by its clear and sympathetic style, is worth more than most of the pretentious and prejudiced works which encumber the history of religions.

*From the Garden of Eden to the Crossing of Jordan.*—Sir WILLIAM WILLCOCKS  
93 pp., 8vo, 4 maps. 1918. 5s. Cairo.

When any work appears dealing with a large number of debatable matters, the first question is whether we must accept it as a final statement, or as material for consideration, or as suggestions to be criticised. What value are we to assign to the statements of the author ?

We are met on the first page by a strong statement. On Gen. ii, 6, "There went up a mist from the face of the earth," we are told "The word translated *mist* undoubtedly means free flowing irrigation," and "this Hebrew word occurred nowhere else in the Bible." But it does occur also in Job xxxvi, 27, "For He maketh small the drops of water, they pour down rain according to the *vapours* [or 'free flow irrigation'] thereof which the clouds do drop and distil." Now what has irrigation to do in a purely natural cycle here described ? Also the word "*went up* a mist" is unquestionably *up*, and not *poured down* as a free flow irrigation. Were all this merely a suggestion, it might pass as unfortunate ; but it "undoubtedly means" what we see to be impossible. Close to this we are told, "Now no mist, not even a primæval one, will keep a garden alive." Yet in Palestine on the hills, crops of sesame are grown entirely by dew, without rain ; still more may this be the case in a low and damp situation. On p. 4 we read that "the date palm has remained even to our day the tree of life" ; how then could the idea arise that the tree of life was not eaten ?

Another "undoubtedly." "The letter E which precedes the names of the shrines (in Babylonia) is undoubtedly the same as the *yeh* which every Arab uses" as a vocative. Now the E means the house or temple, the *yeh* is the common vocative Oh ! On p. 54 we read of "the salted lands near the lakes" of the Delta in Ramesside times. But there were no lakes at that time, as the sea broke in at the time of Justinian ; till then there were marshes of the Nile stream, but no land under sea level. Such statements as these must reduce us to considering each point on its own merits, without relying on the author's judgment.

The main matters of this discursive work will now be summarised. The position assigned to the Garden of Eden is traced by identifying the four rivers which flowed from it. The Pison is said to be the old Euphrates line from Ramadie to Kerbela : the Gihon, the Chebar or Pallacopas ; the Hiddekel, the Tigris ; and the present Euphrates passing Niffur. The site of Eden, whence these streams divide, is claimed to be N.W. of Hit, the only position where a

garden could be placed which could be irrigated by free flow irrigation all the year. But how much of this depends on the above views on the "mist"?

The rise of the flood waters fifteen cubits is taken as showing an unusual Euphrates flood, which swept over the country, and stranded the Ark on a desert mound named Ararat. Why or where a rise of desert is so named we are not told. Much is said about the modern Arab *gебel*, meaning not a mountain but only desert land of any kind; but this is beside the point, as it does not touch the meaning of the mountains named in the account of the Flood; they are *har*, which always means a mountain, while there is an entirely different word *midbar* always used for a wilderness or desert.

Reaching the times of Israel in Egypt we are told of Joseph and Potiphar being at Zoan, but there seems no proof of this. The Auaris or Ha-uar camp of the Hyksos is identified with Hawara in the Fayum; but probably this, and many other Hawaras, are named from the Howara tribe of Arabs. A strong point is urged that the control of the Delta and Nile irrigation depended on holding the entry to the Fayum, into which the Nile could be turned, and so cut off water from the country to the north of it. But the possibility of this view, setting aside the ancient acceptance of Ha-uar in the Delta, depends on the Egyptian account. In that campaign immediately after taking Ha-uar they besieged Sherohan, Sharuhem in the south of Palestine, and fought the Menti of Satet, or Bedawin south of Palestine. This implies that Ha-uar was near Palestine and not far away south of Cairo.

The plagues of Egypt are compared in detail with the seasonal changes of the country, as Osborn did sixty years ago. The course of the Exodus is then traced in a northerly route on the Palestine road, and Mount Sinai is supposed to be Kadesh Barnea. We read "Elim is undoubtedly Katia," but this phrase is not decisive. One of the main difficulties in the view of a northern Exodus is the mention of the Wilderness of Paran, which is obviously the same as the modern Feiran in Sinai, and cannot be the same word as Barnea, with which the author suggests its connection. This one site which can be identified by name seems to make it fruitless to identify unnamed sites on any other route. The objection that Sinai was "garrisoned by Egyptian soldiers . . . more strictly garrisoned and more hostile to the wandering tribes of Asia than the Delta itself," is entirely untrue. There never was a garrison in Sinai, only armed expeditions occasionally visited the land for mining. Further, whatever Egyptians went there were only a small handful of labourers and a few soldiers, and they only occupied the actual mines, and never controlled the desert. The only valid reason for the northern route is the flight of quails, which are said never to pass far south of the Mediterranean. But that is not enough to gainsay the plain fact of the name of Paran.

Of course irrigation and water control often appears here in different connections; but it is disappointing that a writer with so many ideas, and such experience of the East, should not have seriously taken stock of the facts; thus he has missed making a valuable aid to understanding the many subjects involved.

## PERIODICALS.

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### *Journal of the Society of Oriental Research.*

MERCER, Dr. S. A. B.—*Sumerian Morals.* (Vol. I, 2.) This is a long and careful study of the practical morals, as distinct from the theoretical ethics. First the family life is considered. Marriage was a civil contract and “there is no means of showing that it had any specific religious character.” This accords with Egyptian usage, where the contract dealt with property as affected by a union, which apparently had no other legal status. The penalty for divorce was fixed, as in Egypt, at the marriage, and it could be performed at any time by the husband. Polygamy was possible but unusual. Polyandry was being extinguished at the time of Urukagina, before 3000 B.C. on the shortest reckoning. At that period women had an important position, the kings having the queens’ names often with theirs in decrees. This looks as if an earlier matriarchal system was still respected.

In the matter of repudiation of a parent or a son, no notice is taken of the observation of Miss Simcox (*Primitive Civilisation*) that these included cases of adoption, and the separation of a child from his natural family by legal process. The system of adoption is described as regards the future position.

The business law was ample and detailed, and fully punished acts of carelessness which caused injury to others. Treaties between peoples were regarded as compacts made by the gods, under whom the rulers acted in war and peace. The ideal character attributed to the gods was high according to our ideas, much higher than that of the Greeks. So far as this reflects the ideals of the people, it puts the Sumerian above most races that we know. “Their gods were holy, righteous, just, truthful, pure, good, perfect, compassionate, merciful, mighty”; but they “were subject to the need of change and repentance, just as men are.” In the summing up, “in spite of the presence of much materialism in their social life, and of much regard for ceremonial in their religious life, their moral ideals were singularly high.”

A similarly exhaustive statement of all the passages of texts referring to *Early Babylonian Morals* (Vol. II, 2) seems to show very little difference from the earlier Sumerian ideas. The older population had set the standard adapted to the climate and the conditions of life in the country, and little difference could be expected, unless some great new ideals arose.

MERCER, Dr. S. A. B.—*Egyptian Morals.* (Vol. II, 1; Vol. III, 1.) In these articles the general character of the Egyptians is discussed, as shown by their ideals of life; the difficulty as to the relation of the practical life to the ideal is hardly touched. If the ideals of a people are pitched much above the average practice, there is too much hypocrisy; but if there is no suggestion of hypocrisy, or a double standard, this points to a fair correspondance between the ideal and the practice. From this consideration it seems that we may fairly give the Egyptian credit for most of the virtues that he claims or commands. There is another line of evidence, not touched in these articles, the physiognomy of the nobles and kings, which—thanks to the great art of the early times—is known

to us as familiarly as the portraits of modern statesmen. In these faces of the leaders of Egypt we see unmistakably all that is best and noblest in their ideals of action—the dignity, foresight, patience, and vigour, with usually kindness, and sometimes humour. We feel it would be an inspiration to worthy life to be led by such men: we can credit them with all the virtues that they claim.

The different standards of action are dully realised by Dr. Mercer as limiting the quality of the individual. “He must be commended or condemned not on the basis of our code of morals, but on the basis of the morals of his own nation and times.” Yet it is said of the standard itself that we must judge of it as better or worse than our own. Here there should be more reserve, due to the different conditions, climate and necessities of life in different lands. The relative proportion of qualities to each other largely depends on circumstances. Entirely different builds of character are now needed in New York or an English village, in Russia or in Spain, at the present time. What is a virtue in one country might be a vice of character in another. The morality of the ancient Egyptian is so closely fitted to the nature of the country, that it seems impossible to improve upon it for the present day; all the faults of the people are so exactly reprobated and countered in the admonitions, all the needs of character are so strongly stated in the claims to excellence, that any judgment of the moral standard by that of ourselves is inapplicable.

After classifying the various evidences of family qualities, social qualities, international and religious qualities, the general ideals are dealt with, the standards of good and evil, of free will and of right. The early Egyptian is concluded to have been “devoted to goodness, truth and justice. . . . Considering the limitations of his time, he cannot be too highly praised.”

The second article, on the morality of the Middle Kingdom, is on the same lines. The main development since the early times is in the individuality, the feeling of personal right. The decay of society at the close of the Old Kingdom, left a strong sense of the hollowness, insecurity and injustice of the course of life. The strong rulers who insisted on a high standard had disappeared, and those who sought justice stood alone. Falsehood, and the insecurity of life which it produces, were the great evil of the time. The evils of life had driven men to look for future compensation, and the ideas of different kinds of future existence grew and spread. The Kingdom of Osiris, with the personal judgment, began to take its place as a more reasonable prospect than the haunting of the graveyard. Dr. Mercer’s articles give a summary which will be especially useful to those who make comparative studies with other lands. It might be an advantage to bring in the sidelights given by art and by ideals of the future life, to extend the view of character.

*Report upon Archaeological Research in the College of Literature, Kyoto Imperial University.* Vol. II. March, 1918. Though this does not concern Egypt, yet we must welcome the rise of archaeological work in Japan. There are 76 pages of Japanese text, 24 plates, and then mercifully a summary of 24 pages in English. The style of the excavations seems thorough. Plans and sections are given, the varieties of pottery and flint implements are photographed, and the skeletons are measured in detail and the skulls photographed. This is laying an excellent foundation for comparative studies, and we congratulate Prof. Hamada, who is the director of the work. He has also published—entirely in Japanese—a volume of his travels in Greece, with many photographs, 250 pages in all.

## NOTES AND NEWS.

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THE troubles which have befallen Egypt and the rest of the world have much reduced the number of excavations undertaken here, though the conditions of life in Egypt are better than elsewhere. Prices of labour and of food are high, but have not risen quite as much as in England. Gold and silver have vanished, and depreciated paper is the currency. All classes of natives seem to feel how misled they were in the outburst of a year ago, organised by Germany, and they do their best to regain their character for reason and politeness. The familiar station of Bedrasheyn is a heap of brickbats, and there are no tourists going to Saqqareh.

The American work continues with Dr. Reisner in Nubia, Mr. Winlock at Qurneh, and Mr. Fisher at Memphis. England is represented by Mr. Carter, working for Lord Carnarvon at the Tombs of the Kings, and by the British School at Lahun and Gurob. Dr. Grenfell has been out on a mission to acquire papyri for the British Museum.

The work of the British School has been carried on by Prof. and Mrs. Petrie, Captain Engelbach, Captain and Mrs. Brunton, Mr. Miller, Mr. Jefferies and Miss Hughes. The duty of fully working out and recording a site is incumbent on excavators; and in clearing and planning the cemetery at Lahun, though the XIIth dynasty tombs were exhausted, there was found a cemetery of the Ist to IIIrd dynasties. A hundred graves of this period show the stages of development, from the prehistoric open pit grave, the pit divided for offerings, the shallow shaft and chambers, the stairway tomb with stone door slab, to the deep shaft tomb, which continued through all later times. Many stone vases and much pottery were found which will yield precise dating. One great tomb of the XIIth dynasty had been broken up; but the fragments of inscription left were for Anpy, noble and chancellor, over all royal works throughout the whole land, and over the store of produce. Strange to say, he was a devotee of Sneferu, though living under Senusert II.

At Gurob the *sebakhin* have removed so much earth that graves are now found ranging from the XVIIth dynasty back to the prehistoric, with many scarabs. A few large and important objects have rewarded the work at both sites.

Captain Engelbach is going to take up his duties as Inspector of Upper Egypt. Captain Mackay is in the army at Jerusalem, awaiting the development of the Service of Antiquities, which seems to hang fire, though destruction is rampant in the Hauran. The weather at Jerusalem has been as wild as elsewhere, with two feet of snow and great icicles.





1:1. GOLD URAEUS OF SENUSERT II. LAHUN.  
1:4. MAGIC JAR OF ALABASTER. LAHUN.

# ANCIENT EGYPT.

THE BRITISH SCHOOL OF ARCHAEOLOGY IN EGYPT, 1920.

AFTER five years of absence from Egypt, the conditions seemed to be suitable to resuming the work at Lahun last winter. No difficulties occurred, thanks to the goodwill of Lord Allenby, who has been kind enough to honour us by becoming the Patron of the School. The official world, both British and native, did all that could smooth our stay in the desert at Lahun. The party comprised Capt. Engelbach, R.E. (who was later joined by Mrs. Engelbach, and went on to Ghurob), Capt. and Mrs. Brunton, Mr. Eustace Miller, Miss Hughes, Mr. Jefferis, with Mrs. Petrie and myself. It seemed impossible to realise all that had passed since we left there, when we sat at mess in the same huts. We had nearly all of our older diggers, only two or three absent and doing other work.

The season opened with an interesting discovery before reaching the winter's work. At the north-east corner of Cairo, where the track strikes off for Gebel Ahmar, there are wide clearances of gravel, which has been used for road making. The flints are very large, mixed with blocks of fossil wood, much rolled, evidently washed down by floods from the Petrified Forest about twelve miles away eastwards. The high polish on these palaeoliths shows long washing with sand. A few very rudely flaked flints are among these, with large irregular slices knocked away to obtain an edge, without any definite form. These seem to be the earliest worked flints known in Egypt. When arrived at Lahun, we visited the gravels, full of boulders, which cap the hills between the Fayum and the Nile, all cut to pieces with sharp denudation valleys through 80 ft. of thickness ; but not a single worked flint could be found of that age of High Nile. The working seems to start when the Nile was about 100 feet over the present level.

On the edge of the desert at Lahun our best digger, Aly Suefy, had found a patch of ground about a couple of hundred feet across, thickly strewn with broken flints and many implements of Mousterian age. These were evidently in position as left on the surface, and had not been buried under deposits. The Nile, therefore, has not been above its present level since then, and the fluctuations have all been within the 50 ft. or more of the valley now filled up with deposits.

The entrance of the Nile waters into the Fayum was obviously a favourable place for fisheries, which would attract a population. We now find that from prehistoric times onward there have been settlements on both sides of the valley, at Lahun and at Ghurob. The early people seem to have been poor, but by the 1st dynasty a wealthy class had arisen here, and the graves have a full allowance of offerings, and vessels of alabaster. At the edge of the Lahun desert, close to the station of Bashkatib, we found a cemetery which had been partly attacked in modern times ; on the lower ground, covered by denudation wash, there were still a hundred graves which had only been attacked anciently. These burials comprise the whole series of forms, from the plain open grave of the prehistoric

to the deep shaft tomb which was usual in historic times. The primitive grave was lined with brick, as a rectangular pit. This pit was then sub-divided by brick walls, with the body at the northern end, head north, face east, in a contracted position. The other compartments, from one to four in number, contained stacks of offering jars. These jars were a continuance of the prehistoric ritual of placing jars of vegetable ash in the grave, many containing black ashes, but others having only black mud as a substitute. The next stage was that of making a side recess to hold the body, instead of a roofed grave ; this form began in the late prehistoric age, and it was carried on here into the stage of providing a complete chamber opening from a shallow pit, which was the successor of the original open grave. This form was placed where a thin structure of harder rock lay over a softer marl, thus a hard roof of a foot or two in thickness covered the chamber. Not only was a place for the body provided, but also a second recess for the offerings.

When the burial took place in a chamber it was obviously useless to make an entrance pit equally deep all over. A slope was therefore made down to the chamber, and this was formed into steps for easier access. Thus a stairway tomb was developed, which expanded into a cruciform chamber, with side chamber for the burial and the offerings. From the stone vases and pottery, which are well dated to a single reign by the Royal Tombs of Abydos and allied groups, the age of these developments of the tomb can be fixed. The open grave in this cemetery was made during the earlier half of the 1st dynasty. The shallow chambered tombs are of the second half of that dynasty, and the stairway tombs are of the same age.

The stairway tomb was sometimes closed by a thin slab of stone over the doorway. This was easily pulled forward by plunderers, so it was secured by being let into grooves in the rock at the sides of the pit. This type, though beginning as early as the middle of the 1st dynasty, lasted on to the close of the IIIrd dynasty, as at Meydum, and was even copied in the archaic tomb of the chief architect in the XIIth dynasty. The deep shaft, with one or more chambers at the bottom, was the next type. This type was also begun by the middle of the 1st dynasty, and probably continued here to early in the IIIrd dynasty, judging by the form of the offering bowls and the head-rests. After that the cemetery declined, and nothing can be dated until the XIIth dynasty. Thus, by the forms of pottery and stonework, which we know to have undergone rapid changes, we learn that the various developments of the grave were all started as early as the middle of the 1st dynasty, and continued side by side, until the greater security of the deep-shaft tomb caused it to supersede the other types ; it was favoured also by the increasing wealth of the country which enabled more costly tombs to be made. This sudden appearance of several types of tomb rather suggests that the development had taken place elsewhere, and that the various stages belonged to different tribes, allied in the dynastic invasion.

The contents of these graves are of the usual forms of alabaster, basalt and pottery vessels. The stone is mostly in the open graves, rarer in the shallow chambers and stairway tombs, and absent from the deep-shaft tombs. This agrees with the scarcity of stonework in the tombs of the IIInd and IIIrd dynasties elsewhere. Some unusual objects were found : an alabaster vase surrounded with lotus petals of slate and alabaster, the forerunner of the glazed lotus vases of Hierakonpolis and later times ; three pottery vases of foreign origin, like those found in the tomb of King Den, and a small vase with black band, like that in

*Tarkhan* II, ix, ii. These confirm all this foreign pottery as being of the 1st dynasty.

At Tarkhan it was found, on measuring the skeletons, that the group which appeared to be that of the invaders showed a stature 8 per cent. shorter than that of the earlier people. Though not many skeletons could be obtained in sufficiently good condition at Lahun, the question was examined on six of the open-grave burials, against 18 in closed tombs. The result was that the closed burials were  $7\frac{1}{2}$  per cent. shorter in the leg, and 6 per cent. shorter in the arm. As these differences were three or four times the amount of the probable error of the contrasted quantities, there is good reason to accept them as veritable. This points to the open-grave burials being those of the prehistoric race, and the closed tombs those of the dynastic invaders, and thus corroborates the suggestion that the various types of burial were already in use before they were imported.

The large cemetery of the XIIth dynasty was the main object of work this year. Much remained to be done in exhausting chances of discovery, and in completely examining and planning the whole site. The interior of the pyramid of Senusert II was completely searched; in turning over the dust and chips lying near the sepulchral chamber, the gold uraeus was found, which must have been on the front of the crown. It is a massive casting, with inlay of carnelian and lazuli, a head of lazuli, and eyes of garnet in gold setting. Two stone lamps were also found in the pyramid, besides two or three already obtained from there.

The tomb of Princess Sat-Hathor-ant, where the jewellery was found in 1914, was further examined; behind the fine limestone lining a recess for offerings was found, containing common pottery and the great alabaster jar figured in the frontispiece. Perhaps this is the finest jar known. It bears a magical inscription stating that the princess would have everything that was produced on earth, and all she needed, in this jar. Such a form of magic provision is not known before; it superseded all the offerings, the models, and the scenes of the tombs, by one comprehensive formula, which carried magic and the power of the word to its utmost extent.

Outside of the pyramid enclosure a great tomb was opened up, the tunnel of which ran toward the pyramid, ending in a chamber beneath the enclosing wall. This contained a splendid panelled sarcophagus of red granite, and a canopic box of granite. The sarcophagus, like that of Senusert, and of one of the princesses, was of exquisitely accurate work, with an average error of less than a hundredth of an inch. No name was found in this tomb. The position of the tomb shaft, 100 ft. outside the pyramid enclosure wall, suggested that other shafts might be hidden as far out as that. The whole ground on the north of the pyramid wall was therefore turned over down to the rock, moving a mass of chips which had been thrown into old quarries there, to a depth of sometimes 15 ft., but no other shaft was found. In the face of the enclosure round the pyramid there was an inserted stone, resting on another block inserted in the rock floor; but it proved all solid rock behind these. Opposite the queen's pyramid, a length of the brick wall was separated by vertical joints, as if it had been filled in later; this was removed, but solid rock was behind it. Then the whole length of the brick wall, as far as the great stairway, was cleared behind, to search the rock, which was all solid. Lastly, a shaft was sunk in the rock, 40 ft. deep, in the position most likely to intercept any gallery leading to tombs under the rock mastabas north of the pyramid; and cross-tunnels were cut from this to north and south in both of the strata where the Egyptians had elsewhere made

galleries. All of these trials not reaching any passage, there only remains to be tried an extensive rock-drilling, to see if any chambers were actually cut under the small pyramid and mastabas.

While searching further in the platform built up of chips to the south-east of the pyramid, a stairway of brick was found, running diagonally to the pyramid corner. This was made before the great enclosing wall which cut across it, and it was the approach for the high officials during the course of building, to avoid the inconvenience of climbing over the waste-heaps.

On the top of the hill behind the pyramid, the foundations of a large building were found in 1914. At that time, and in 1920, many pieces of diorite statues and of a circular altar, limestone sculptures and architectural fragments, were found scattered about here. A most complete search failed to show any tomb shaft, and the fragments found were not like those of the mastabas. Considering that the *sed-heb* chapel of the apotheosis of Sonkhkara was on the top of the hill at Thebes, it seems probable that this was the *sed-heb* chapel of Senusert. At the corners of it were foundation deposits, with pottery, trays of reeds, and bull's head and haunch.

The town of the pyramid builders at Kahun was further searched, on the roads, and a few parts which had not been cleared in 1890. A large number of clay sealings were found, and a curious portico which seems to have been a place of domestic worship.

On a hill in view of the pyramid stood a great mastaba of brick, over a tomb with a steep entrance passage, and a great shaft for lowering the sarcophagus, like the VIth dynasty tombs of Dendereh. The tomb-chapel on the side of the hill, in front of the sepulchre, was like those of Beni Hasan. This curious combination was due to the taste of the chief architect of Egypt, Aypy, who was buried here; he also cut off public access to the chapel by a deep pit, right across the court, and too wide to be jumped. Only some pieces of the inscriptions and of two statues remained, for the place had been ravaged for stone. Another curious preference is seen on his statue, where he is said to be devoted to Sneferu; this devotion to the first pyramid builder may have been due to the architect's interest in building the Lahun pyramid.

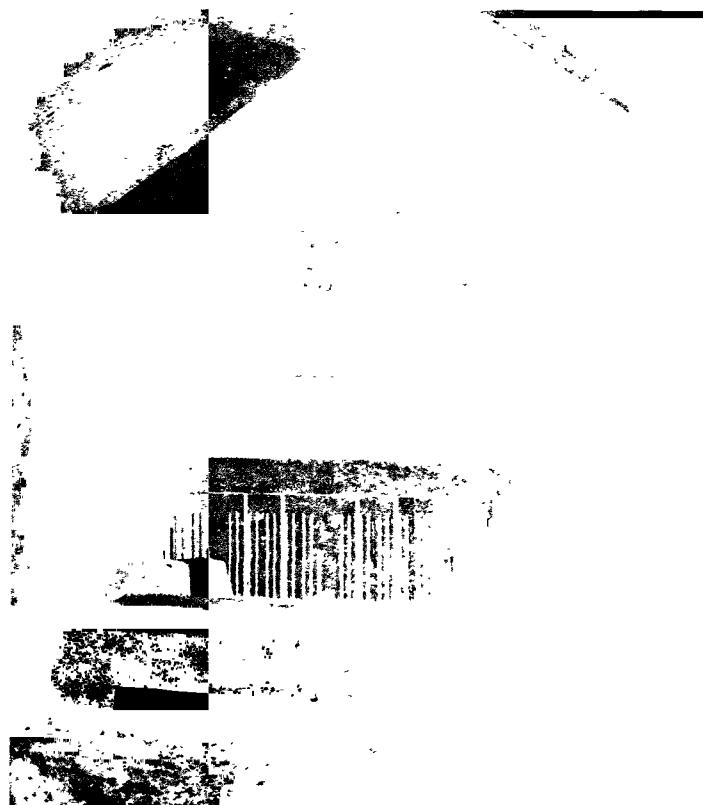
In the XVIIIth dynasty there were some wealthy people, under the early kings. Groups of scarabs were found dated to Aahmes, and four to Amenhetep I; with these are several scarabs which are clearly of the earlier time of the XIIth dynasty, probably obtained from the mastabas near by. The cemetery at Ghurob continued in use down to Ramessu II.

A puzzling monument is a granite sarcophagus of a prince "heir of the lord of the two lands, the king's son, Pa-ramessu." This was his style until the sarcophagus was nearly finished; then on one panel of the body he is entitled "the king's son (Ramessu mery Maot) *neb uben maot kheru*." Here a cartouche is assumed, and the addition *neb uben*, "lord of shining"; while on all the other places where the name Pa-Ramessu occurs, there has been an erasure, and *neb uben* has been put over it. On the lid, the middle band has Pa-Ramessu, with the squatting man and whip determinative; this is doubtless what has been erased on the body. The lid, having some spare space, was altered by putting on each side of the middle band "the king's son (Ramessu mery Amen) *neb uben*" with a cartouche. It seems then that an heir-apparent Pa-ramessu had come to the throne just before his sarcophagus was completed, and had the alterations made with cartouches. Yet he cannot have reigned

long, or at the capital, because his burial was only in the outskirts of a small provincial town. Who this prince can have been it is difficult to decide. There were two statues of a Pa-ramessu, who filled the highest offices of state under Haremheb (ANCIENT EGYPT, 1916, 35-6), and who may justly be taken to be the same as Ramessu I. His father was named Sety. He cannot be the prince of Ghurob, as his tomb is known at Thebes, and he was not a king's son. Looking later, there is no prince Pa-ramessu, and if we accept the shorter from Ramessu (which occurs on the sarcophagus) there is no prince Ramessu except the second son of Ramessu II, who died between the twenty-sixth and thirtieth years of his father's reign, and who cannot therefore have succeeded to the throne. The later Ramessu princes reigned fully, as Ramessu III to XII, and therefore cannot be this obscure prince. Their tombs are known at Thebes, except that of Ramessu VIII. It is thus possible that this is the sarcophagus of Ramessu VIII, but unlikely, as his second cartouche does not appear. The so-called Ramessu IX, whose tomb is unknown, is really Saptah II, son of Sety II, and he would certainly have had Saptah in his cartouche. So far as we know at present, then, this sarcophagus belonged to some unknown prince who was the heir to the throne, and who hardly succeeded before he was overthrown. Possibly he was an elder brother of Ramessu II. The sarcophagus is unique as having a sledge beneath it, carved all in one piece in the granite.

The season's work has thus given some entirely new results both of objects and of inscriptions, and the steady clearance of sites that are not reserved has now been carried as far south as the entrance to the Fayum.

W. M. FLINDERS PETRIE.



GRANITE SARCOPHAGUS AND CHAMBER, LAHUN.

## THE ETHIOPIAN SOVEREIGNS AT MEROE.

DR. REISNER has restored for us the history of Ethiopia during the Napatite period. His archaeological work in the province of Dongola has been a remarkable achievement, and it has settled the chronology of the Sudan from the time when it began to be a world-power town to the epoch of Alexander, as well as the racial affinities of the dynasties who ruled at the time over Ethiopia. But the work done by Dr. Reisner at Napata and its neighbourhood, can be supplemented by the work done by Professor Garstang at Meroe.

Owing to the war only a bare outline of this has as yet been published. A considerable number of royal names, however, were discovered in the course of the excavations which carry back the history of Meroe to Dr. Reisner's IIInd dynasty. Here is a list of them :—

(1) Atlenersa Ra-khu-ka, "king of Upper and Lower Egypt." On blue faience found in the Great Palace. (Reisner: B.C. 650-40.)

(2) Senq-Amon-seken Ra-sekheper-en, "king of Upper and Lower Egypt." On blue faience found in the Great Palace. Also on a blue object discovered at Memphis. (B.C. 640-20.)

(3) Aspalta Ra-mer-ka, "king of Upper and Lower Egypt." On stones of the Great Palace which he restored or enlarged, on a stela from the Sun-temple which he built, and on blue faience. (B.C. 590-70.)

(4) The Horus Amtalqa Ra-uaz-ka, "king of Upper and Lower Egypt." On blue faience and small pyramids of solid gold, probably tribute, found in the Great Palace. (B.C. 570-50.)

(5) Mal-neqen, "king of Upper and Lower Egypt." On stones from the Palace which he restored or enlarged, on small gold pyramids and on blue faience. (B.C. 550-40.) He never has his Throne-name, but the personal name is sometimes written Mal-neq, and the determinative *nefer* is almost always attached to the first syllable, indicating that *malna* signified "good" in Meroitic.<sup>1</sup>

(6) Amon-kalbat, who seems to be Dr. Reisner's Netaklabat-aman, the leader of his IIIrd dynasty. (B.C. 535-15.) On blue faience from the Palace.

(7) Amon-kalka, Dr. Reisner's Karkaman, the second king of his IIIrd dynasty. On blue faience from the Palace. (B.C. 515-495.)

(8) Sa'heri  . This must be Dr. Reisner's Saasheriya, the fourth king of his IIIrd  dynasty. On blue faience. (B.C. 475-55.)



(9) Amon-stykal. This must be Dr. Reisner's Astabarya-aman, the third king of his IIIrd dynasty, with the ox (*ka*) written instead of the sheep (*ba*). On blue faience. (B.C. 495-75.)

<sup>1</sup> The Meroitic word must be *malna*, since in the inscriptions of Askhankherel in the North Pyramid 5, the name of "the Osiris Malna-[qen]" written *Malna-NEFER*.

Dr. Reisner's IVth dynasty is not represented at Meroe. But we have—  
(10) Han . . . who may be a queen. On blue faience.

(11) Amon-ardu[s]. On blue faience from the Southern Palace.

(12) Amon-matleka[n]. On a stone from the south side of the City wall.

To be distinguished from (4).

(13) Amon-ark Ra-khnum-ab, "king of Upper and Lower Egypt," whom I would identify with the classical Ergamenes, the builder, as I believe, of the great city wall. (B.C. 210-180.) Southern Pyramid 6.

(14) Amon-mer-Ast Ra-nefer-ankh-ab, "king of Upper and Lower Egypt." Southern Pyramid sand blue faience from tomb 298.

(15) Ra-neb-kheper. On a scarab with deformed Egyptian hieroglyphs and AUG in Latin letters.

(16) Neb-hotep-... On yellow faience from the South Palace.

(17) Neteg-Amon and Queen Amon-tari. On blocks from the temple of Amon and the sanctuary south of it. It is probable that Amon-tari also restored the Sun-temple. Neteg-Amon was buried in the Northern Pyramid 22.

(18) Agini-rherhe and Queen Amon-renas. On two stelæ from shrine south of Meroe, and on blocks from the Sun-temple. The stela records the Ethiopian invasion of Egypt. (B.C. 24-22.)

(19) Queen Amon-shahet. On an obelisk in the temple of Amon. She was buried in the Northern Pyramid 6, where Ferlini found jewellery (now at Berlin) of the late Ptolemaic or early Roman period.

(20) Toqrerhi-Amon. On blocks from the Lion Temple, and Northern Pyramid 27.

(21) Shen (?) On blocks from the Lion Temple.

(22) Ark-kharer. On a plaque obtained by the late Mr. Bishop from the temple of Amon. He appears as crown prince at Naga, and was a son of (17).

(23) Ya-baleq. On a fragment of stone (920).

To these may be added (24) Amon-khabil, "the Sun-god of Qash, ever-living, the Horus of the Reservoir," at Basa, the site of a reservoir and temple, a day's journey from Meroe on the road to the Red Sea.

Dr. Reisner has shown that the Napalite dynasties were of Libyan origin which explains the fact that in the sculptures of the Sun-god temple the Meroites are represented with the features of the blond race—Greek noses, high foreheads, and thin lips. The later sovereigns from Neteg-Amon onward are negro or negroid, and it is at this time that the queens take precedence of the kings. After the end of Dr. Reisner's IIIrd dynasty (B.C. 450, according to his chronology), Meroe either became independent of Napata or, more probably, was destroyed by foreign invaders.

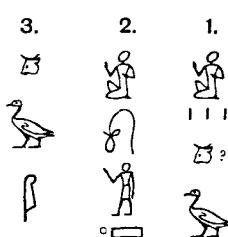
Little chronological help can be obtained from the form or position of the existing pyramids. Each of the three groups contains pyramids of very different periods. In the Western group of those that remain, six are stepped; the rest have straight and, in six instances out of nine, fluted sides. In two of the stepped ones the art belongs to a good period; another with fluted sides was plastered all over, and surrounded by a walled court. The chapel of another fluted pyramid contained three seated figures instead of a false door. In two other instances a tablet was inserted in the centre of the false door, the tablet in one case (No. 15) being in Meroitic, and recording the name of Amon-tari. A Greek bronze lamp was found in one of these pyramids. In the Southern group all

the existing pyramids are stepped, and the chapels have false doors, solar disks and boats. One of them (No. 10), the joint tomb of "the Priest" (*kelni*) Kaltela Ra-ar-ta(?)a, "Lord of the Lake-land," and of Kalka, "the king" is of late date; another (No. 41) is the tomb of a "daughter of the king"; a third (No. 4) is the pyramid of Kenrethr, "the Sun-god of the South"; it is attached to another pyramid the chapel of which is destroyed, and is of considerably later date than the adjoining pyramid of Amon-mer-Ast.

In the Northern group the pyramid of queen Kentakit (Candace) Amon-arti (No. 1) stands apart by itself. That of Arkhenkherel Ankh-ka-ra (No. 5), who associates with himself an older king, "The Osiris Malna-NEFER," *i.e.*, Malneqen, is also intrusive, and has straight sides of peculiar form. It may have been the first of the group to be erected. The other pyramids with straight sides are No. 2, with four great bulls on each exterior side of the chapel, three images instead of a false door, and a representation of Hathor standing on the lotus; No. 6, that of queen Amon-shahet (19), where Ferlini found his jewellery, the chapel of which has an arched vault; No. 8; No. 11 which is very late and barbaric; No. 12, with late reliefs and blank cartouches, a standing figure of the king taking the place of a false door; No. 13, with late reliefs; No. 14; No. 17 of king Amon-ton-m-Mari Neb-ma-ra (late); No. 18, with a court, of Amon-khetosen; No. 19, of Triginal with full-faced king in place of a false door (very late); and No. 27, of...tera (?) Amon Kheper-ka-ra, with seated king instead of a false door (very late). The sides of Nos. 16, 17, 18, and 19, though straight, are not fluted. The stepped pyramids are: No. 3; No. 4 (of Amon-...akha [Ra]-...n-ab); No. 7, of Alu(qa)-Amon Ankh-zeto-mer-Ast "lord of the two lands," who seems to have been a contemporary of Ptoleny IV; No. 9, with a pylon; No. 10, with pylons and winged bulls; and No. 22, of Neteg-Amon, with the bier of Osiris in place of a false door.

That the Sun-temple—the first stage on the road from Meroe to the Red Sea—was built by Aspalta, we may conclude from the fragments of his stela that were discovered there. It was subsequently restored, after partial destruction, by Agini-rherhe (18), perhaps with the spoils of his Egyptian campaign. But it is probable that the list of conquered or tributary provinces which adorns the eastern front of the temple was the work of Amon-tari, since when the cartouche accompanying it was first uncovered I was able to read the characters [A]m[on-t ?]r. As the list was not quite correctly read from the photographs in Mr. Griffith's publication of it, and has since suffered severely from exposure, it is worth while to give it as it appeared immediately after excavation.

The first three cartouches are (or were) :—



That is (1) "Men" (*abr* in Meroitic)-' ? -g.  
 (2) *a-wa-a-r*.  
 (3) *c-g-i*.

Since -g and *gi* are plural suffixes,

the three cartouches do not contain geographical names, but are merely an introductory formula: "The men (*abrg*) of the countries" (*awar' =gi*) or something similar.

Then follow (or followed) the geographical names :—

(4) G-m-t-a ; (5) T-'s-n-a ; (6) B-r-i-ha-a ; (7) P-t-r (?) [or kh ?]-‘-i ;  
(8) A-n-rh<sup>1</sup>-‘ ; (9) ...-rh-y-rh-y ; (10) ...-wa-sh-‘ ; (11) ...-...-n-q ;  
(12) ...-t-r-a ; (13) ...-rh-  $\Delta$  [perhaps a word signifying “ cities ”] ; (14) ...-g-to-‘ ;  
(15) ...-a (?) -q-‘ ; (16) ...-...- kh-‘ ; (17) ...-...-a.

One word more. Nastosen, who is placed by Dr. Reisner, B.C. 330-310, was a native of Beruat, usually identified with Meroe. But no trace of his name has been discovered there. Can he be the Amon-khatosen of the Northern Pyramid 18? And is he further to be identified with “ Aktisanes the Ethiopian,” who, according to Diodorus, overcame Amasis and was counted among the Egyptian kings? We know that in the troubled earlier years of Ptolemy V, two Ethiopian kings, Harmakhis and Ankh-m-khu, ruled at Thebes, and the discordant medley of excerpts which take the place of Egyptian history in the pages of Diodorus would make anything possible.

A. H. SAYCE.

<sup>1</sup> The character which I transcribe *rh* is represented by *sd* in the transliteration of some of the names in which it occurs (e.g., *Merul* and *Mandulin*, *karhake* and *Candace*), though it remains *r* in the name of *Meroe* (*M-rh-e-u-i*) and interchanges with the ordinary *r* in two Meroitic inscriptions discovered by Prof. Garstang. Hence we might have a name like *And* corresponding in Greek to *Anrh*.

## NOTES ON THE JEWELS FROM LAHUN.

THE jewellery found at Lahun by the British School of Archaeology—or rather all of it except those pieces retained by the Cairo Museum—recently arrived at the Metropolitan Museum of Art in New York, where it was placed on exhibition in December last. Without exception, those who have seen the treasure have been struck almost as much by the conscientious care and ingenuity shown by Prof. Petrie and Mr. Brunton in its reconstruction, as by the marvellous skill and taste of the ancient jewellers who made it. It was therefore with considerable diffidence that I suggested two changes in stringing. I would not care to dignify these suggestions with a published note, were it not that both Mr. Lythgoe and Mr. Mace, who mounted the jewellery for exhibition, have tested them out, verified them as correct and adopted them. This being the case it seems desirable that the reasons for the changes should be put on record in *ANCIENT EGYPT*, especially since the article which Mr. Lythgoe prepared to appear in the *Metropolitan Museum Bulletin*, December, 1919, at the time the jewellery was put on public view, did not seem to be the appropriate place to explain them in detail. These two changes, adopted in exhibiting the jewellery in New York, involve the stringing of the Senusert II pectoral and the cowries, and I have added a third, tentative, and as yet not finally adopted, change in the stringing of the lions' heads. This last is not susceptible of the demonstration which I believe can be presented for the first two changes.

To Mr. Mace I am indebted not only for many details on the particular jewels, but for numerous references and suggestions embodied in the following pages. I should state finally, that this note is written before the arrival in America of the definitive publication of the Lahun excavations by the British School, and that, therefore, reference can only be made to Prof. Petrie's preliminary descriptions<sup>1</sup> with the consequence that I may have missed a number of interesting points.

The point of departure for these suggestions was the string of gold cowrie-shells. Prof. Petrie has demonstrated that in the intervals between the eight large gold cowries, sixteen gold "double rhombic" beads should be strung, two in each interval. This arrangement is assured by the distance between the thread holes in the cowries and in the "rhomboid" beads—a distance which is practically identical in both cases. Now there can be little question that these cowries and "rhomboids" were intended to be strung tightly together, and if this is done they make a string 20 $\frac{1}{4}$  ins. in circumference, clasped. Because of the corrosion of the bronze cores of the cowries, threading them is now impossible and the only photographs of them which can be taken without the dangerous operation of re-drilling them, are somewhat deceptive. Each cowrie has two

*Times*, May 20, 1914; *The Illustrated London News*, June 20, 1914; *ANCIENT EGYPT*, 1914, p. 97; *Journal of Egyptian Archaeology*, 1914, p. 185; and *Catalogue of the Exhibition held at University College, London, 1914*.

thread holes through it, one slightly shorter than the other, but the difference in lengths between these two holes is so slight that it would take a string of cowries and "rhomboids" of 40 or more inches in length to make a complete, closed circle with all of the beads lying flat as in the photographs. In short, with this  $20\frac{1}{4}$ -in. string, when the clasp was closed, the beads would all be standing on edge, more or less vertically. If worn about the neck such a string of cowries would have the appearance of an upright collar, but a very ill-fitting one, for the circumference of a woman's neck is usually no more than from 12 to 14 ins., and this collar would therefore have hung almost upright an inch or so beyond, and under her chin. As all Egyptian necklaces were flat lying, except the tight



I. GIRDLE OF COWRIES, AS ARRANGED IN THE METROPOLITAN MUSEUM.

collars about the throat, it is evidently necessary to look for some other arrangement of this string.

After this conclusion it was inevitable that one should turn to those other "rhomboid" beads of carnelian and green amazon stone which had been strung with the "drop-pendants." Prof. Petrie had already considered this combination, but gave up the idea on two grounds.<sup>1</sup>

First. The size of these "rhombic" beads is such that, strung side by side, the space between the two threads would be greater than that between the two

<sup>1</sup> *ANCIENT EGYPT*, 1914, p. 98.

threads of the cowries and gold "rhomboids." This in many cases is true—in others it is not. In fact these hard stone "rhomboids" show a marked variation in size. While the gold beads were made mechanically either from dies or moulds, these stone beads were cut individually, and a larger error was tolerated in gauging them than was to be expected in metal work. Some of them are accurately made to take the strings of the cowries; others will overlap slightly, but not objectionably, if strung on the same threads (see Fig. 1). Finally—and to me personally, this is conclusive—the variations among the "rhomboids" is not as great as that which exists between the big and little lions' heads from this find. Although of gold, variations in the distance between string holes of from 2 to 3 mm. actually exist among these heads, and yet there is no question but that they belong together.

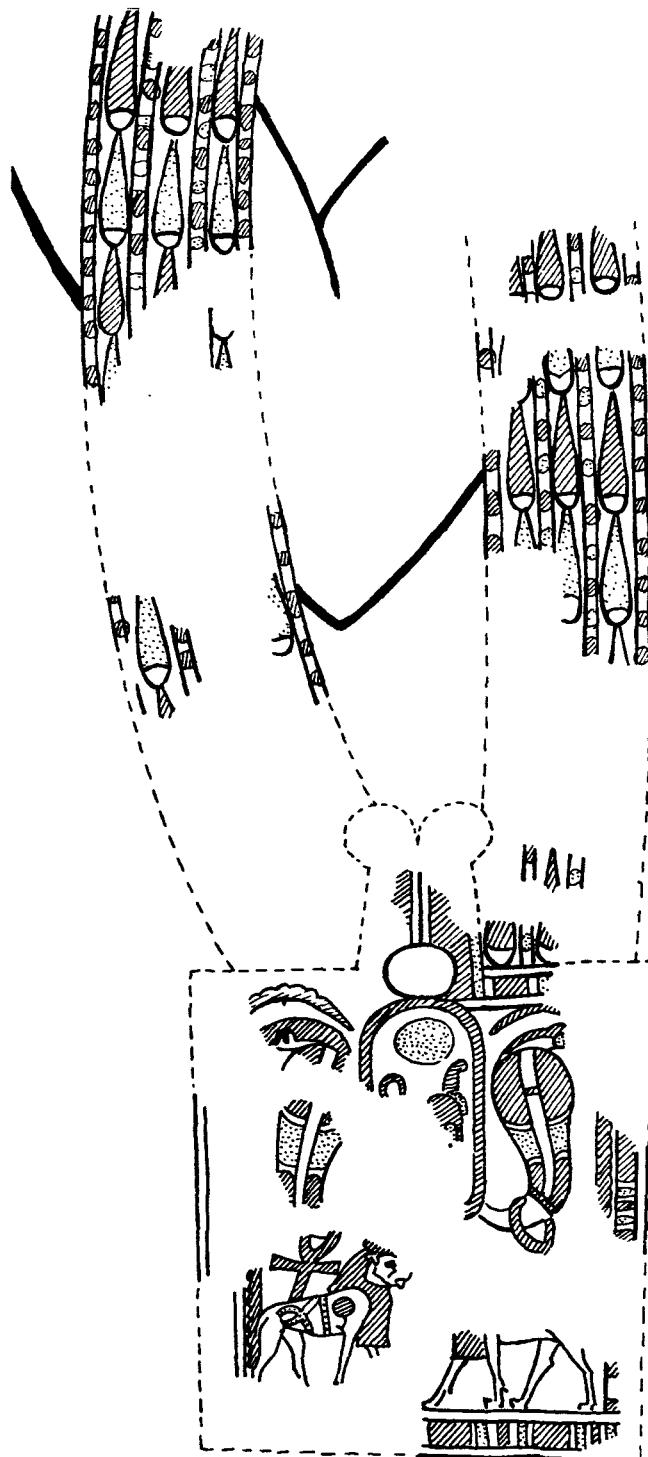
Second. In Prof. Petrie's consideration the stone "rhomboids" are needed for the suspension of the "drop-beads," making a long, fringe-like necklace to be worn below and outside of all the other ornaments. This difficulty can be met satisfactorily I feel sure.

Two pectorals were found and one of them has been suspended on a string of amethyst ball-beads. Even if these latter are not employed as I suggest below, the second pendant is still to be provided for, however, and there can be little question that the "drop-beads," combined with the 20 gold and 12 green ball beads not otherwise strung, belong to it. Examples of such suspending strings of drop-beads are not at all uncommon on the monuments<sup>1</sup> (Figs. 2 and 3), and it is extremely interesting to find that at Dahshur, pectorals were associated with just such strings. De Morgan found in the First Treasure, with a pectoral of Senusert II, 30 gold ball beads and 37 drop beads of gold, carnelian, lapis lazuli and amazon stone,<sup>2</sup> and in the Second Treasure two pectorals, 43 drop beads and 98 ball beads, all of gold.<sup>3</sup> I suggested, therefore, that the drop and ball beads of the Lahun treasure made a characteristic pectoral suspender. Variations in the arrangement and number of spherical beads among the drops are found in all examples, and therefore the arrangement of this string was left to experiment. There were 73 drops strung together in the "fringe-necklace," and one other handed over separately to Mr. Mace by Mr. Brunton. Graded and arranged by colours it was evident that one more carnelian and one more lazuli drop were needed to make any consistent arrangement, and those two were restored. The small number of ball beads obviously was an enigma, but there is precedent for the omission of them between the drops, and they therefore were strung provisionally at the ends. The result (Fig. 5), is a double string of exactly the length to support the pectoral just over the lower chest where it

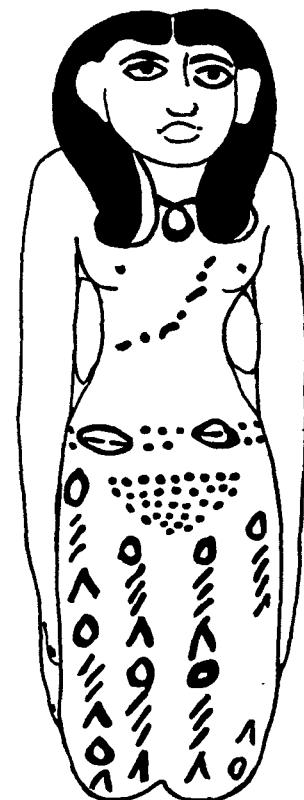
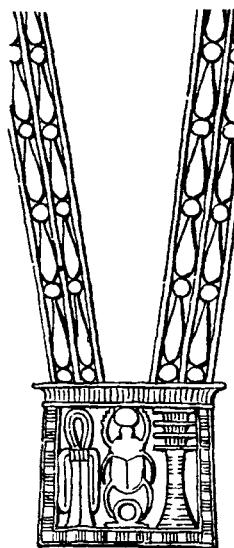
<sup>1</sup> A few examples at random are XIIth dynasty: Griffith, *Beni Hasan*, III, Pl. III, single string of alternating drop and ball beads, coloured blue, green, blue, yellow; XVIIIth dynasty: Quibell, *Tomb of Yuua and Thunu*, Pl. XII, double string of drops alternating with balls in pairs; L.D., III, 77A, triple string of drops alternating with balls in pairs; Rosellini, *Mon.*, II, Pl. LXXX = Champollion, *Mon.*, IV, Pl. CCCCXXXII, double string of drops alternating with balls, coloured green, blue; Daressy, *Annales*, 1901, p. 5 ff. = Reisner, *Amulets*, 12196-12201, double and triple strings of dark and light blue, red and gold drop beads alternating with ball beads in threes; XIXth dynasty: Caulfeild *Temple of Kings*, Pl. XVI, quadruple string of drops alternating with balls in threes; XXth dynasty: Vernier, *Bijoux*, 52005, Pl. V.

<sup>2</sup> De Morgan, *Dahchour*, I, pp. 60, 63, Pls. XV, XVIII.

<sup>3</sup> *Ibid.*, pp. 64-5, Pls. XIX-XXII.



2. PECTORAL WITH GOLD-CAPPED DROP-BEADS.  
(FRAGMENTS FROM TOMB 226. THEBES.)



3. PECTORAL WITH DROP-BEADS.  
(TOMB OF YUAA AND THUIU, XII.)

4. GLAZED FIGURE. LISHT.  
(METROPOLITAN MUSEUM.)

should hang.<sup>1</sup> Furthermore, the materials of which it is made—gold, lapis-lazuli, carnelian and amazon stone—are exactly the same materials as those used in making the Senusert II pectoral. This identity of colour scheme may be taken as evidence that the drop beads and this pectoral of Senusert II together make one jewel. If no other use be admitted for the amethyst string, it may be assumed to have belonged with the Amenemhat III pectoral, now in Cairo.

Thus, with the drop beads provided for, we arrive at the point, where (1), the slight errors in size of the "rhomboids" can be explained by the conditions of their manufacture; where (2), the stone "rhomboid" beads are no longer necessary for the threading of the drop beads; and, where (3), they are in turn looking for a place. It becomes a matter of necessity, therefore, to try them with the cowries, the previous stringing of which has resulted in an ill-fitting collar.

Sixty-one rhomboid beads, 31 of carnelian and 30 of green amazon stone, were strung with the drop beads and one more of amazon stone, presumably found later, was turned over to Mr. Mace by Mr. Brunton. It does not seem totally beyond the bounds of possibility that, even with the most conscientious work in the tomb, two more should have escaped detection. And still more likely, if these beads were worn by the Princess in life, that the strings might have broken at some time, the beads been scattered, and two of them completely lost before they were restrung again. I see no strong objection to considering the set as having been originally 64 in all, made up equally of red and green. Admitting this number, they divide readily into eight lots of eight each for the eight intervals between the eight cowries. With the double gold beads they make a total of 96. For experimental stringing there was no further guide, and one is left to satisfy his own personal tastes. An extremely attractive arrangement of gold and stone "rhomboids" between each pair of gold cowries is: green, gold, red, red, gold, green. Such is the arrangement shown in Fig. 1, and it may be said in passing that in its original colours it makes one of the most charming jewels ever found in Egypt.

The resulting string, when clasped, has a circumference of 33 or  $33\frac{1}{2}$  ins. If actually threaded, the beads, and particularly the cowries, would still stand more or less on edge when the clasp was closed, because experiment shows that there is not enough variation in the size of the rhomboids to make an inner row appreciably shorter than the outer. The photograph of the beads lying flat is therefore still deceptive, and there can still be no question of the string being intended either for a collar or necklace. In fact the one part of the human body where it would fit naturally and lie smoothly would be above the hips, for 33 or  $33\frac{1}{2}$  ins. is a normal measurement on a slender person around the top of the pelvis.

In other words, the cowries strung with the rhomboids seemed to make a girdle, and a very little research supplied the confirmation of this fact. The Metropolitan Museum possesses a number of XIth and XIIth dynasty "dolls" of faience and limestone, most of them from the excavations in Lish and Thebes, and I have found another of wood in the Boston Museum of Fine Arts, possibly of the same date—all wearing cowrie bead girdles. The Boston "doll" (Fig. 6) is a remarkably striking example. There can be no hesitation in recognising the cowries, because they are both modelled in relief and painted yellow to represent gold. In scale they are correct. In number they are identical

<sup>1</sup> Newberry, *Bersheh*, I, frontispiece.



5. PECTORAL AND BEAD NECKLACE. AS STRUNG IN THE METROPOLITAN MUSEUM.

with the Lahun girdle, if in addition to the three shown in front and the three behind, two more were supposed to be hidden under the hands on the hips, which are unnaturally narrowed on the flattened "doll." Even the distance between cowries is as it should be if we are to suppose that the spaces now blank were once filled with dots of paint to represent smaller separating beads. If there never were such dots of paint, we must suppose that sometimes the cowries were worn with bare threads between, a method of stringing beads or shells which is not without parallel.<sup>1</sup> Most of the New York "dolls" represent the cowries in very rudimentary form, but all are perfectly recognizable in the light of the "doll" already figured. The clearest example in the Metropolitan Museum is shown in Fig. 4, like those in other museums. This "doll" is of faience, and like all of the others in this material, has accessories shown in black under the glaze. Here, not only are the cowries drawn to scale and properly spaced, but between them two strings of separating beads are plainly marked. To forestall a possible criticism, I should explain that the marks on the legs are pendants. Behind, one of them falls exactly between the two legs in a way that would be impossible if tatooing were intended, and as far as the belt itself is concerned, the Boston "doll" with its modelling in relief demonstrates the fact that the cowries are not tatooed.

The recognition of a girdle among the Lahun jewels leads to its recognition at Dahshur. In the First Treasure there were six large cowries, and apparently 98 "rhomboid" beads of gold (in pairs), carnelian, lapis lazuli and amazon stone.<sup>2</sup> The numbers are interesting in the light of those from Lahun. In the Second Treasure,<sup>3</sup> there is no mention of rhomboid beads with the cowries and, if none were actually found, we are forced to conclude that these cowries were worn, as the Boston "doll" (Fig. 6) may represent them, without connecting beads. In the Tomb of Khnumit there were found nearly 100 "rhomboid" beads, but no cowries,<sup>4</sup> which probably should be reconstructed as a bead girdle like that of Senebtisi. This last was made up of "rhomboids" only.<sup>5</sup> Buckles for two bead girdles were found in the Tomb of Ita,<sup>6</sup> and from the Tomb of Nubhotep comes an object which, while not the buckle of a girdle of the type here dealt with, was seemingly the fastening of a kind of cloth scarf, or sash, which crossed the shoulders and encircled the waist.<sup>7</sup>

A regular item of a Middle Kingdom court jewel-set thus was a girdle, and this girdle seems to have usually been made up of cowrie shells and rhomboid acacia beans,<sup>8</sup> either together or separately. Furthermore, even the less wealthy

<sup>1</sup> As for example the *šwrt* beads described in Mace and Winlock, *Senebtisi*, p. 63, and the drop bead suspenders of the Rameses III pectoral in Cairo, Vernier, *Bijoux*, Pl. IV.

<sup>2</sup> De Morgan, *Dahchour*, I, p. 60, Pl. XVII.

<sup>3</sup> *Ibid.*, p. 65, Pl. XXIII.

<sup>4</sup> *Dahchour*, II, Pls. VII-VIII.

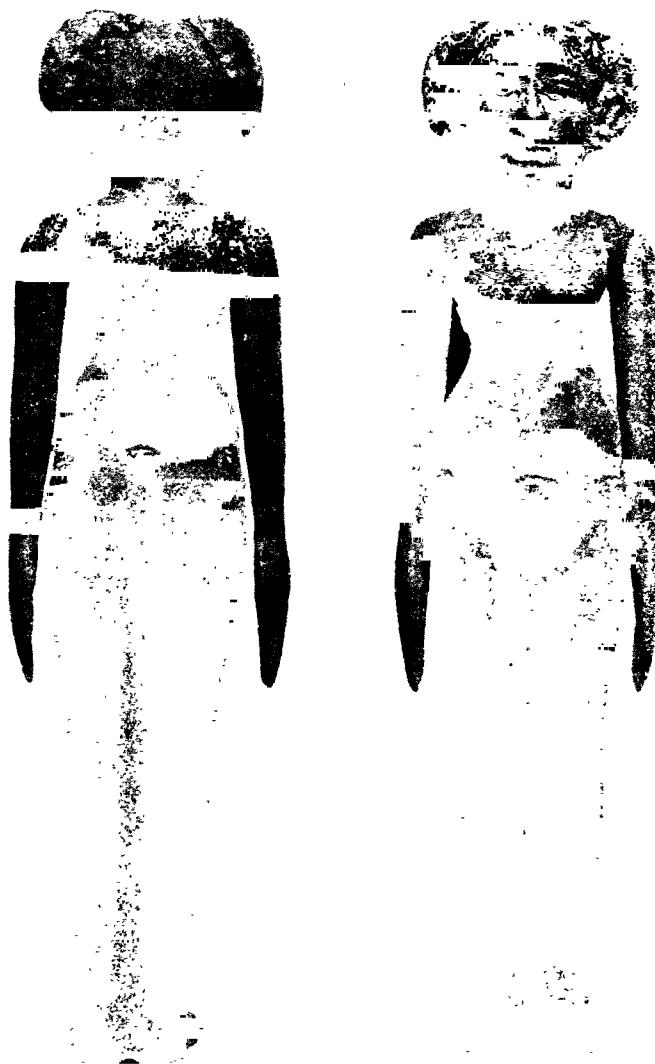
<sup>5</sup> Mace and Winlock, *Tomb of Senebtisi*, p. 68, Pls. XXII-XXIII. The other girdle was purely Osirian.

<sup>6</sup> *Dahchour*, II, pp. 52-3.

<sup>7</sup> *Dahchour*, I, Pl. XXXVIII, C. No description is given, but the illustration shows it to be identical, even to the colours, with the sash buckle of Neferure', in Rosellini, *Mon.*, I, Pl. XIX, 23.

<sup>8</sup> Mace and Winlock, *Senebtisi*, p. 68, note 1. Small silver and gold cowrie shells are sometimes found in the Middle Kingdom, but it would be difficult to say whether they are necklaces or girdles. See De Morgan, *Dahchour*, I, p. 66, Pl. XXIV; Winlock, *Bulletin of the Metropolitan Museum*, 1914, p. 17, Fig. 8; Garstang, *Burial Customs*, p. 222, and Williams, *Jour. Egypt. Arch.*, 1918, p. 173, Pl. XXVIII.

women of the period wore girdles,<sup>1</sup> and the fashion passed over from the Middle Kingdom to the Empire. Thus Prof. Petrie has published the jewellery of a woman buried at Thebes during the Hyksos Period "around whose waist, outside the innermost cloth, was a girdle of electrum beads, 26 of semicircular



6. WOODEN FIGURE WITH COWRIE GIRDLE. BOSTON MUSEUM.

form, copied from a disc of leather folded over and stitched ; the spaces between these had two threads of six beads each, and in one case a space of seven beads. Three spaces had been gathered together by a tie of thread, so as to shorten the

<sup>1</sup> Mace has found two : one published in *Diospolis Parva*, p. 41, from Pit 90, which was a belt 10 ins. wide of faience and shell disk beads with a fringe of real shells ; the other at Naga ed-Dér, which was a belt of twelve strings of disk beads of the same materials. Several others of the XIIth and XIIIth dynasties and of the XVIIth and early XVIIIth dynasties have recently been found at Thebes by Lansing. A preliminary report on his excavations is appearing shortly in the *Bulletin of the Metropolitan Museum*.

circuit of the girdle to fit the body. The whole girdle was 31·6 ins. long, and was shortened to 28·4 ins.<sup>1</sup> A little later, about the middle of the XVIIIth dynasty, a young woman found by Passalacqua in Thebes wore what must have been a charming girdle of gold, lapis-lazuli and carnelian. From his description, it consisted of a series of "square-knots" similar to the little gold clasps found at Lahun, spaced at intervals along a double string of smaller beads.<sup>2</sup> Finally, even in modern times Nubian girls are occasionally seen wearing belts of cowries and beads very much like those worn by their ancient ancestresses.<sup>3</sup>

To consider now the way in which the girdle was worn. Personally, I have never seen a bas-relief or statue of a woman wearing a girdle over her clothing. Before the Empire the tight-fitting woman's shift descends from chest to ankles in an unbroken line. In the Empire a cloth sash is often bound over it about the hips, but the many representations of bead girdles are always on naked girls or occasionally worn by girls next their bodies, under transparent garments.<sup>4</sup> The "dolls," which, whatever their purpose in the graves, unquestionably represent dancing girls, are striking Middle Kingdom examples; dancing girls and maid-servants are shown so attired in a woven bead belt at innumerable banquets in the XVIIIth dynasty;<sup>5</sup> swimming girls on the toilet spoons wear nothing more;<sup>6</sup> and it constitutes the sole article of apparel of the ridiculous caricatures of negress slaves.<sup>7</sup> It may be objected that all of these little persons can hardly be compared with propriety to the Princesses of Dahshur and Lahun, but at the time that the dancing girls and servants were wearing such girdles two of the young princesses of the royal family, Neferubiti and Neferure, daughters of Thotmose I and Thotmose III, respectively, appear clad in jewellery identical with that from Lahun, including girdles very much like this one of cowries—and nothing more.<sup>8</sup> And then there is the very well-known statuette in Turin (Fig. 7) of a charming little girl of good family who is clad in the same way. Like Neferubiti and Neferure she has not yet passed adolescence. On the walls of the belvedere of the harîm at Medinet Habu, where no one but the royal family could penetrate in ancient times,<sup>9</sup> we see full-grown women of the court represented in sufficiently scanty clothing to tell whether they wore girdles or not. These decorations from the harîm of Rameses III are

<sup>1</sup> Petrie, *Qurneh*, p. 9, Pl. XXIX.

<sup>2</sup> Passalacqua, *Catalogue raisonné*, p. 159. The girdle was stolen from him, but he describes it as having been of the same form as his necklace No. 599 which is Schäfer, *Goldschmiedearbeiten*, p. 31, Pl. VIII, No. 35A.

<sup>3</sup> Roberts, *Egypt and Nubia* (1846), II, vignette. Firth, who called my attention to this picture, has seen such girdles being worn in Nubia in recent years.

<sup>4</sup> Rosellini, *Mon.*, II, Pl. XCIII; Champollion, *Mon.*, II, Pl. CLXXV; Prisse, *Mon.*, Pl. XLIV, and *L'Art (Dessin)*, Pl. VII; Wilkinson, *Manners*, I, p. 501, Fig. 261. What appears to be a girdle worn over or under the dress in L.D., III, 42, I take for the hem of a short-sleeved shirt.

<sup>5</sup> Davies, *Tomb of Nakht*, frontispiece and plate XV are the latest published examples of a very common scene.

<sup>6</sup> Prisse, *Mon.*, Pl. XLVIII, and *L'Art (Industrial)*, Pls. XXI, XXIII.

<sup>7</sup> MacIver and Mace, *El Amrah and Abydos*, Pl. I; Wainwright, *Jour. Egypt. Arch.*, 1915, p. 203, Pl. XXVI.

<sup>8</sup> The best copies are the earliest (Rosellini, *Mon.*, I, Pl. XIX, 23-24, and Champollion, *Mon.*, II, Pls. CXCIII-IV). The later copies are all less detailed.

<sup>9</sup> Rosellini, *Mon.*, I, CXII-III; Champollion, *Mon.*, II, Pls. CXCIX-CC; L.D., III, 208; Wilkinson, *Manners*, II, pp. 59-60; Hölscher, *Hohes Tor von Medinet Habu*, Figs. 8, 40-42.



7. WOODEN FIGURE WITH GIRDLE. TURIN.

in fact unique, but if we are to take them literally we must conclude that in the seclusion of their private apartments the Egyptian ladies laid aside their hobble skirts and disported themselves at their ease, clad only in their jewellery, or at most in diaphanous garments, which were represented in paint only and have since been washed completely away. The fact that the ladies of this particular harim wear no girdles, need not be taken as proof that they were not worn by higher-class women of the Empire.<sup>1</sup>

Having, as I believe, established the existence of girdles among the treasures of Lahun and Dahshur, I should like to conclude this paper with some consideration on the string of gold lions' heads. It is a subject of some difficulty, purposely avoided in the preceding pages. With the exception of the similar set from the Second Treasure of Dahshur, these heads are unique in Museums and, so far as I am aware, there is no representation of them on the monuments. In fact they appear to have been jewels whose vogue lasted so short a time that they never found their way into Egyptian pictorial art, and thus for any explanation of their wearing we are forced to rely wholly on practical consideration.

In the first place, their condition is such that Prof. Petrie was able to string them. This done, and the clasp closed, they have every appearance of making an upright collar, and such they have been unhesitatingly called. Only, when in New York the experiment was actually tried of putting them on a woman of normal size, one glance was enough to convince everyone present that they never could have been such a collar. Again it is a question of circumference. Clasped they should be worn on a throat measuring  $16\frac{3}{4}$  ins. round, because, standing upright as they do, on an ordinary woman they sag down under the chin in a most unbecoming way. Now an upright collar, to be attractive, should be a fairly close-fitting one. If the wearer of this collar had a throat of such a size that the collar fitted closely, the uneven surface on the inner side would make it most uncomfortable, and to draw it in  $1\frac{3}{4}$  to 2 ins., while clasping it, would be a painful operation if it was anywhere near the snug fit which one would expect. The tight, upright Egyptian collar of the monuments seems to have been designed like a bead bracelet and must have been clasped like a bracelet, with a buckle which does not have to be drawn in to be fastened.

Actual experiment, then, makes it seem improbable that the lions' heads should make a collar. Immediately one wonders how they could have been worn. The neck being practically eliminated—arms, wrists and ankles being out of the question—the head and waist remain the only parts of the body to consider. This is assuming with Prof. Petrie that the large and small heads belong together—an assumption which can be taken almost as an established fact.

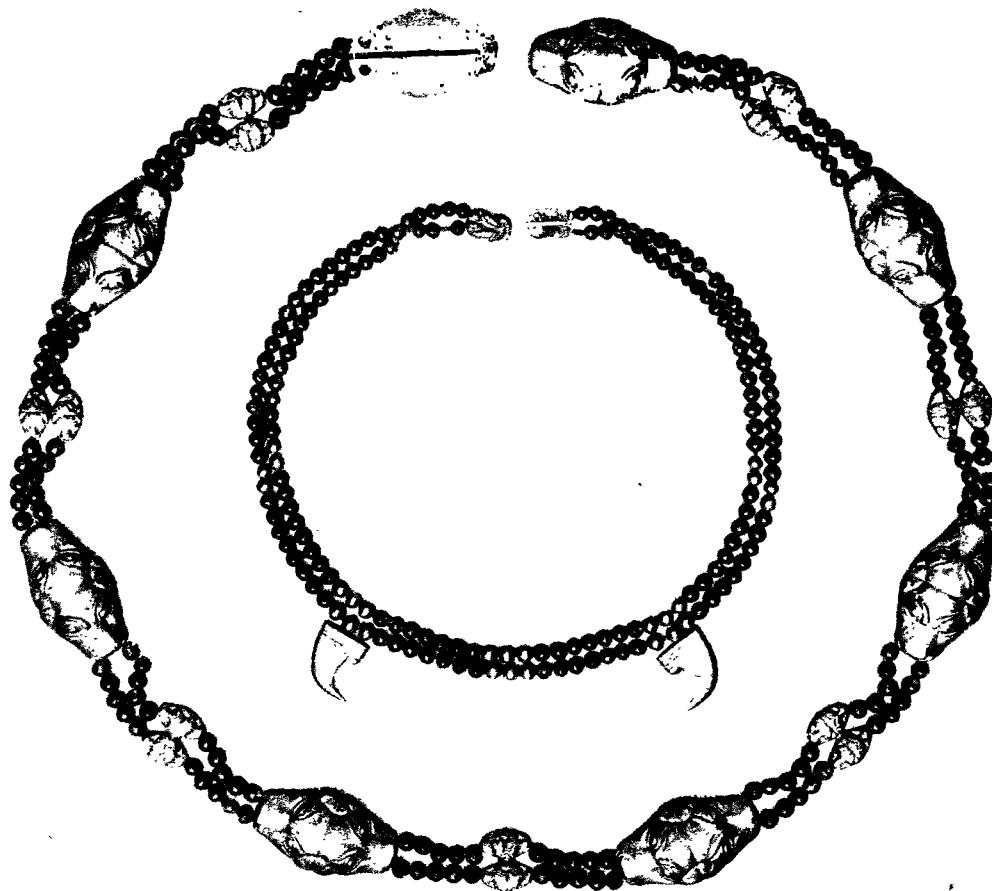
The suggestion was made that they constituted a circlet. The answer to this appears to be that they present features both unnecessary for a circlet, and never found among Egyptian circlets. All known Egyptian circlets are, practically speaking, hoops, not jointed nor having a clasp, and being modelled or decorated on the outer surface only. The wearer's head is thus eliminated to all intents and purposes, and there remains only her waist to consider.

For the idea that the lions' heads constituted a girdle, naturally the inspiration was in all that has been written above. Again, size and workmanship class

<sup>1</sup> Were they customarily worn under the garments by grown women, they would unquestionably be shown sometimes at Tell el-Amarna, where the bodies are shown in full detail through the clothing.

them with the cowries. And finally, it is only around the waist or hips that it would be comfortable to wear anything that has to be shortened almost 2 ins. to be fastened. To be sure, it is impossible to advance arguments as convincing in this case as in the case of the cowries, but still it is an idea which has a great deal of probability. It remains necessary only to discover some method of stringing which would give a length approximating that of the cowrie girdle.

The experiment was tried, therefore, of lengthening the strings and spacing the beads equally on them, leaving bare thread between. Knots were made to hold the heads at equal intervals, and as authority for this arrangement the fact



8. CLAW NECKLACES AND SUGGESTED ORDER OF LION-HEAD GIRDLE.

was quoted that the cowries of the Boston "doll" and the Second Dahshur Treasure may have been so strung. To me, personally, however, the double line of bare threads did not seem in keeping with the fineness of the other jewels.

The suggestion was also made that small beads, such as are used in the bracelets and armlets, may have been employed. But of the little beads there are hardly enough for the requirements of these very bracelets and armlets even, and a double string, of the required length of twice 16 ins. more, could not possibly have escaped the painstaking and conscientious search of the finders of the tomb.

Hence, unless it is supposed that the lions' heads were not strung up when they were placed in the tomb, there is really only one set of beads which could have

been used. The solution that I suggest, therefore, is that the lions' heads were threaded with the amethyst beads which formerly were strung with the Senusert II pectoral. This is a solution to be accepted with all reserve, and one which is for the present, at least, held in abeyance by Mr. Lythgoe and Mr. Mace. The latter, for instance, objects to this particular arrangement because of the size of the amethyst beads, in relation to the smaller lions' heads especially, and raises the point that up to the present no ball beads have been found strung in any way except as necklaces, in Egyptian tombs. Nevertheless, since there appear to be grounds for considering that the lions' heads cannot be a collar, and are probably parts of a girdle, there seems to be some point in setting forth in this place the result of the experiment of stringing them with the amethyst beads. At least by so doing I may be inspiring others to settle the matter one way or the other.

In the first place, when one puts the amethyst beads (on which was formerly strung the Senusert II pectoral) between the lions' heads, a girdle is made up  $32\frac{1}{2}$  ins. long, clasped. The length is near enough to that of the cowrie girdle to have been worn in the same way and the beads divide up excellently into sets, ten in each interval.<sup>1</sup> For this arrangement no mechanical objection can be raised. The diameters of the beads are such that they go perfectly on the threads passing through the lions' heads, and they stand, in thickness, midway between the big and little heads. Secondly, when laid beside the claw necklace there is a harmony of colour and workmanship which gives a wonderfully sumptuous effect (Fig. 8).<sup>2</sup> One gets the impression that the multicoloured cowrie girdle was to be worn with the pectoral and its polychrome string of beads, and that this gold lion-head and amethyst girdle was intended to be worn with the gold claw and amethyst necklace. As a matter of effect, aside from all other considerations, the stringing of the lions' heads and amethyst beads results in an incomparably magnificent jewel. Finally, the girdle so constructed conforms in type with the majority of those already quoted in having a series of large elements spaced along and joining two strings of smaller beads.

As has been said already the lions' heads from Lahun are paralleled nowhere except in the similar set from Dahshur. It is practically impossible, therefore, to demonstrate either the truth or falsity of this suggested stringing as a girdle. There is, however, one circumstance which is at least favourable to its correctness. The Second Dahshur Treasure, among which the other lions' heads were found, contained two gold claws and 252 amethyst ball beads.<sup>3</sup> Accepting 252 as a minimum (the actual number may have been considerably greater) it is quite possible to reconstruct the same combination of lions' head girdle and claw necklace in this case as well. Of course amethyst ball beads and claw necklaces are common enough without such girdles, and right in the First Treasure, 240 amethyst beads and two gold claws were found without any lions' heads.<sup>4</sup> And yet, while there is no positive evidence to be derived from the Second Treasure, at least it is suggestive to find that in the only two cases where lions' heads have been found the same combination is a possibility.

<sup>1</sup> This takes up 140 beads. One more was strung with the pectoral, but there is a place for that in the claw necklace, making a total of 152 amethyst beads in the latter.

<sup>2</sup> Showing the effect of a purely experimental stringing of the lions' heads. If they were thus strung as a girdle they were intended to lie flat on the hips. Hence in the photograph, where they lie flat on a table, the intermediate beads present an irregular appearance.

<sup>3</sup> *Dahchour*, I, p. 66, Pl. XXIX.

<sup>4</sup> *Ibid.*, p. 63, Pl. XVIII.

In conclusion, I should like to repeat that while I feel that it is possible to demonstrate rigidly the new stringing of the pectoral and the existence of the cowrie girdle, the proposed reconstruction of the lions' heads as a second girdle to go with the claw necklace, is purely tentative.

H. E. WINLOCK.

[The evidence for the use of cowries in a girdle, seems good reason for accepting that arrangement in the Lahun series. The close similarity between the cowries and the lion heads, in size and fastening, leads also toward these having been in a girdle. The suspension of the pectoral by long drop beads is, however, a difficult matter. The dates of the examples quoted should be observed. From the IIIrd down to the XIIth dynasty, there seems to be no example of drop beads threaded in a long string. At Meydum there are long equiterminal beads and balls; in *Beni Hasan III*, iii, the same; in the funeral offerings (Lacau, *Sarcophages*, xl ix-l iii) the belt fringes are all of long and ball beads, the strings for collars are the same. In no case is there a drop bead in a long string. In the XVIIIth dynasty there was a great fall in taste, and a loss of the old ideals after Tehutmes III; then drop bead strings appear, with Tehutmes IV. The effect of the broad masses of drop beads close to the minute work of the pectoral is killing, and it is hard to believe that the refined taste of the XIIth dynasty would have made such a mistake.

As to the absence of clothing along with jewellery, note the account by Lady Mary Wortley Montague of the Turkish baths, where a large company of ladies will join in social functions, clad only in their jewellery. We must also remember that the Egyptian scenes were not of life on earth, but for life in a future state; even we should hesitate in a picture of heaven to introduce knee breeches, crinoline or hobble-skirts. At Deshasheh (Vth dynasty) the actual dresses buried for a woman were with tight long sleeves like a modern *ghalabiyyeh*, and not at all like the low garment with shoulder straps figured in the tomb scenes of that age. The festive scenes of the XVIIIth dynasty tombs represented the joys of a future life, and need not be accepted completely as true in this world.—W. M. F. P.]

## GENERAL MAUDE'S PROCLAMATION.

THE War has been responsible for many things—not all of them bad, and among the good ones may be counted the wholesale manner in which archaeology has been brought to the notice of the nation. Many thousands of men, who otherwise would never have thought of such a subject, have found themselves among ruins and other relics of past civilisations, when they were sent East with the various armies. A large proportion of these men have visited these remains, and have even been conducted round the museums of the larger towns, and some have been subjected to lectures in hospitals and elsewhere on the history, civilisation and art of the particular country in which they then happen to be. While no doubt the majority of such men could wish for more exciting fare, there is always a minority which is keenly interested and full of a thirst for information on little points which happen to have come before their notice ; as for instance, where the horse came from, and when he first made his appearance in history ; whether it was possible to cut hard stones with copper and emery, and so on ; and it has even been the writer's pleasant lot at the Cairo Museum to be searched out by members of his previous week's audience, in order to certify themselves on various points, which had been so hotly debated during the interval as to have become somewhat confused.

This unexpected spread of interest in archaeology has its dangers, as the preservation of the past is essential to understanding it ; and no one is competent to know what must be observed without a proper training. It was most satisfactory to see in the *Basrah Times* as early as August 6th, 1917, a fully conclusive proclamation signed by the late Sir Stanley Maude on May 22nd. It reads as follows :—

Whereas it is convenient to take over both for the preservation of ancient monuments, ancient objects of vertu, and relics movable and immovable of ancient times, hereinafter styled "antiquities," and also for the prohibition of traffic in forged articles falsely asserted to be antiquities ; I, Lieutenant-General F. S. Maude, K.C.B., C.M.G., D.S.O., in virtue of the authority vested in me as General Officer Commanding His Britannic Majesty's Forces in Mesopotamia, do hereby proclaim as follows :—

- (1) Throughout the occupied territories all antiquities, to wit, all ancient monuments, ancient objects of vertu, relics movable and immovable of ancient times, which formerly were the property of the Ottoman Government, or shall hereafter be discovered, are the property of the Administration of the Occupied Territories acting on behalf of the said Territories.
- (2) The term "ancient" for the purposes of this proclamation shall be deemed to signify antecedent to the year 1500 A.D.

- (3) Whosoever having discovered any antiquity fails to inform accordingly the nearest Assistant Political Officer in charge of a district within a period of 30 days shall be liable to a fine not exceeding 50 rupees.
- (4) Whosoever having discovered any antiquity unlawfully appropriates the same to his own use shall be liable to a fine not exceeding ten times the value of the article discovered.
- (5) Whosoever negligently or maliciously destroys, defaces, or in any way damages any ancient monument or any site which he has reason to believe to contain antiquities, shall be liable to a fine not exceeding 10,000 rupees.
- (6) Whosoever traffics in or abets the traffic in antiquities, except under a licence duly issued by the Officer appointed hereto, shall be liable to a fine not exceeding 10,000 rupees.
- (7) Whosoever, whether licensed or not licensed, sells or offers for sale as antiquities any article which he has not reason to believe antique, shall on conviction be liable to imprisonment for a period not exceeding six months or to a fine not exceeding 10,000 rupees, or both ; and his stock of antiquities or pseudo-antiquities shall be liable to be confiscated.
- (8) Whosoever reports the discovery of an antiquity over which the Administration decides to exercise its right of property shall be duly compensated ; and when any such antiquity is relinquished by the Administration, the Administration shall deliver the said antiquity to the possession of the person appearing to have the most proper claim therein, together with a certificate enabling the said antiquity to be transferred in accordance with the terms of this Proclamation.
- (9) The power vested in the Administration under this Proclamation together with power to perform all necessary acts subsidiary thereto are hereby delegated to the Chief Political Officer or such person or persons as he may appoint to act on his behalf.

Signed at Baghdad 22nd day of May, 1917.

F. S. MAUDE, *Lieut.-General,*  
Commanding the Army of Occupation.

The law is admirable in conception and it is to be hoped that it may be effectively carried out.

Apart from the depredations of the mere plunderer, who goes to obtain saleable loot, Article 5 is framed to combat the ravages caused by the ignorance of two distinct classes of destroyers, at whose mercy antiquities only too often lie. These are, firstly, the ignorantly callous ; and secondly, the ignorantly keen.

The wrecking of the earliest sculptures of Egyptian history in Sinai was a sad case of the wanton destruction by modern "practical" men. They were too ignorant to know either the historic value or the market value of what they deliberately destroyed without any benefit to themselves. The late Inspector of Antiquities at Luqsor had great trouble with some "practical" engineers who had "no use" for what they knew nothing about. At Silsileh there is the great bed of sandstone which the ancients largely quarried, leaving numerous examples of their methods, and inscriptions of historical value, etc. Extensive

as these records of the world's doings are, they by no means cover the whole available area for quarrying. Yet when these engineers needed sandstone for some work which they had in hand, they declined starting on a fresh piece of the cliff, but insisted on quarrying on the ancient sites, thus quite needlessly destroying for ever records of the world's progress which can never be replaced. Most fortunately the Department of Antiquities interfered in time to prevent any serious damage being done, and no doubt the necessary sandstone was obtained from the immediate neighbourhood.

Another kind of danger is also to be prevented by the clause about any who "negligently . . . destroys . . . or in anyway damages . . . any site." The amateur excavator usually damages or destroys more information than he preserves, and the hunting for something pretty or valuable is as destructive when done to amuse an amateur as when done for the profit of a dealer. A quantity of hunting is reported from various sites, even printed, with the melancholy result that the hunters could not in the least date what they were working at, or give any useful account of it; while the date and proper record would have been an elementary matter to anyone educated in the subject. Even if everything is preserved and put in a local museum, the value of it is destroyed if there is no record of the relative positions and ages of the objects, no statement whether found in original position of deposit, or in ancient rubbish, or in modern tip-heaps.

Action such as this, while excellent in its intention, is deplorable in its results, for the novice full of his search all unwittingly does what is probably furthest removed from his mind or wishes, he destroys irretrievably more than he saves. It is not generally understood what a great range of facts have to be observed in excavating, how many subjects must be all promoted together, how varied must be the interests and view of the excavator, how ready he must be to succeed in preserving all he may find. Recently some great scholars—who were not trained as excavators—found some splendid bead-work of coloured figures, they could not preserve it, and it all fell to pieces. Anyone who knew his business would have easily preserved the whole of it complete; but the great scholars had never even heard of using paraffin wax.

The encouragement of plundering by the purchase of antiquities from dealers is a difficult subject. The only proper rule is never to buy anything that is not of great importance to be preserved, where the information must not be lost. The ordinary objects, and specially any pieces of monuments recently broken, should be left on the dealers' hands. The encouragement of the chance finder to proclaim his accidental discoveries is most important; it will put all honest possession on a legal basis, give the earliest notice to the Government, and provide an above-board supply of objects to the tourist and the foreign museums. The recommendations officially given for the new law in Palestine also recognises fully the rights of every chance finder, and encourages the open sale of all that can be honestly sold.

The activities of the forger are also heavily penalised. Large quantities of cylinder seals and cuneiform tablets have been produced in recent years, and a stiff hand must be put on such frauds. The manufacture of false antiquities has reached such proportions now in Egypt, that it may be considered one of the national industries, and indeed the Department of Technical Education includes a collection of modern "antiquities" among its exhibits of the crafts of the country. The result is that there are numbers of antiquity shops throughout Egypt in which a very large percentage of the objects exposed for sale are

forgeries. Moreover, the trade in forgeries has not only reached extreme proportions in quantity, but also in quality, for the workmanship has improved so much in recent years that when a new line in statue heads or some other novelty comes on the market, it is quite likely to deceive the expert until he has examined it long and carefully. The writer well remembers accompanying one of the leading experts on Egyptian antiquities on a visit to a well-known up-country dealer. Before long two or three fine alabaster vases of large size caught his eye. They purported to be of late pre-dynastic, or of early dynastic, date, but after a long and detailed study of their form, material, and workmanship, accompanied by a critical cross-examination of the dealer, the prospective purchaser passed them over with the remark: "Twenty years ago I would have given you £25 for them, but to-day I dare not risk it."

The most obvious lesson of the whole wretched position of museums paying heavily to encourage the destruction of monuments for plundered spoils, with the loss of all archaeological history, is that properly recorded observation and excavation of certified and dated objects is the only right channel for either museums or the public to draw upon. The moral to those who stay at home, and to our local and national museums, is that every effort should be made to train excavators and to carry on the largest amount of proper excavation in order to save what little remains to us of the history and treasure of the past.

G. A. WAINWRIGHT.

## REVIEWS.



*Bulletin de l'Institut Française d'Archéologie Orientale.* Cairo, 1918.

[We much regret that this will be the last contribution of our good friend, Mr. Joseph Offord, who died at the beginning of this year. He did much to spread the knowledge of the French works on Egypt; both for his work and his genial personality he will be much missed and regretted.]

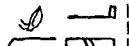
An important fascicule of the Bulletin is that of the first of Vol. XV, 1918. It contains some 140 pages, with about 25 hieroglyphic titles of Pharaohs and princes, to each page. It embodies the "Répertoire Pharaonique pour servir d'Index au Livre des Rois d'Égypte" of M. Henri Gauthier, that is to say, his great five-volume work in the series of the "Mémoires de l'Institut Français d'archéologie Orientale du Caire." By issuing this Index in the comparatively inexpensive format of the Bulletin, with every royal name again reproduced in its hieroglyph form, the Institut has placed within the means of many students the opportunity of acquiring what is practically a catalogue of Egyptian royalties, from Menes to the Emperor Decius.

In Vol. XIII of the *Bulletin de l'Institut*, Mr. F. W. Read has a paper upon the precise sense of the word which Dr. A. H. Gardiner, in an article upon "The Egyptian Word for Dragoman," had rendered as "teacher of foreign languages." Mr. Read's view is that "scholar" would be a nearer translation of the title, and his main basis for this rendering is a passage in Chapter 125 of the *Book of the Dead*, wherein it is applied to Thoth the Scholar god *par excellence*.

Another essay of interest in the thirteenth volume is that by M. Henri Gauthier, "La Nécropole de Thebes et son Personnel." This refers to the inscriptions belonging to a considerable number of personages who were attached to certain priestly and lay offices for a site near Thebes known as , "The place of Truth." Most of these people were buried in the hill of Deir el-Medineh, and a quantity of funerary objects and records of them have for many years been in the Turin Museum.

In the spring of 1917 the French Institut at Cairo carried out excavations at the hill site and found further tombs of members of the association or fraternity of the Place of Truth, enabling M. Gauthier to explain who and what they were more completely than Maspero was able to do, some years ago, when treating of them chiefly from the material at Turin.

Many of them were attached to the cult of the deified Amenhotep I, and it appears that his worship was certainly the origin of the confraternity of the Place of Truth.

Many of the office holders were also entitled *sotemu oshu* 

They wore special garments and headdresses as depicted upon the sepulchre paintings and steles. Some were simply servants of Amon, the domestic for hand washing, and the official for weighing silver and gold, and so on. One was "serviteur de l'administration de la cuisson au bois (?) de la patisserie du palais," which reminds one of the chief baker in the story of Joseph.

M. Gauthier's researches show that the members of the Place of Truth were permitted to serve living Pharaohs, in the administration and temples, or at least that those determined as being *sotemu oshu* were so.

As far as we at present know, no female seems to have been a member.

M. Georges Daressy, in a long article, makes excellent archaeological use of an Arabic work, which he entitles the "Livre des Perles Eufouies, et du Mystère Precieux," an edition of which, based upon three manuscripts, was published by Ahmed Bey Kamel some fourteen years ago.

Among the articles in Vol. XV of the *Bulletin* is one by Mademoiselle Chatelet, a pupil of M. Loret, which is entitled "Le Rôle des Deux Barques Solaires." The object of the thesis is to prove that the well-known Monzet and Mesketit sun ships are not the vessels Ra occupies from sunrise to midday, and from noon to sunset, but that one is used for a complete day, and the other for night.

The first evidence is from M. Jéquier's version of "Le Livre de ce qu'il a dans l'Hadès," which states that at the twelfth night hour "the great god departs from Hades that he may embark upon the Monzet."

From the inscriptions upon the tomb of Sety I, close to the representation of the events of the first hour of the night is a line reading "This god in the Mesketit barque which navigates in the *arerit* of this domain."

Another literary proof is obtained from the phrase in the *Book of the Dead*, Chapter XV, Papyrus Ani, Pl. 20, reading "He sails in the Monzet, he ties up (*amarre*) in the Mesketit."

A final proof is given from three of the pyramid texts given by M. Lacau (*Rec.*, XXV, 153), which read "Thou passest the night in Mesketit, thou passest the day in Monzet." Good cause for so rendering this sentence are quoted, Mdlle. Chatelet summing up claims that the real myth was that the exchange of vessels occurred at sunrise and sunset, but modestly adds that, perhaps accidentally at certain periods in variant theological schools, other views may have been current.

Another interesting essay in this fifteenth volume is that by M. Gustave Jéquier upon "Some Objects appertaining to the Funerary Ritual." The first of these symbolic relics he treats of are the "Piquets d'amarraige" or the mooring pegs for the dahabeahs of the dead. Illustrations of these are to be found upon the Sarcophagus of Sâ-Uazet, published in *Riggeh and Memphis VI*, Plate XXIII. These special pegs thereon depicted, instead of having merely a knob, or spreading a flattened top to support the driving blows of a mallet, terminate in a human head and bust. It seems manifest without any literary proof that these sepulchral mooring posts are deified in some sense. They are to be seen in the same form emblazoned upon Theban tombs, but in two connections—the first as objects of some funeral cult, secondly, as accessories at a ceremony relating to the due presentation of the deceased to the gods of the dead. In the *Book of the Dead*, in some illustrated papyri, one of these human-headed pickets is shown as securing down the bird-catcher's net in the Elysian fields.

A more frequent picture of these objects is to be found in the representations of the Nile-boat voyage of the mummy (a favourite Theban theme at the XIXth dynasty era), to the shrine of Osiris at Abydos, of Anubis at Siout, and Amentit in Lower Egypt. In the rubrical texts for these scenes two pickets are mentioned, that of the prow and that of the poop. They are shown driven into the soil, and priests are rendering offerings unto them. Then another scene shows the boat being moored with ropes to the pegs, and libation offerings being made to them.

In these scenes, the pickets do not have human heads to them, but the rites with which they are worshipped are the same as those for a deity, and without doubt, M. Jéquier says, these objects are the Deésse-piquet of the Pyramid Texts, first recognised by M. Lefebure, the great Menat   .

They are also in some inscriptions identified with Isis or Nephthys.

Finally, these mooring pegs are mentioned, as might be anticipated, in descriptions of the voyages of the Solar barque.

M. Jéquier also writes upon the regal item of decorative costume called at various times Uatet, menkeret, and khebset, that is the animal's tail, worn by the Pharaoh upon ceremonial occasions, as shown in so many paintings and reliefs.

He proves by careful consideration that these tails are so accurately drawn that the usual idea that they are intended for lions' tails is erroneous, and that they are undoubtedly intended for those of a bull. This is confirmed by the frequent assimilation in Egyptian literature to a bull, and especially so by the figure of the king as a bull upon one of the prehistoric slate palettes from Hieraconpolis. The tail is always shown as being worn suspended from a waistbelt.

The syllable *set* of its name Khebset, M. Jéquier derives from a root *sed* or *set*, meaning tail. It forms the moiety of the word *heb-sed*, festival. The "Feast of the Tail" or Sed Festival, so often alluded to in Egyptian writings, and portrayed in reliefs, certainly seems to be a symbolical ceremony of the assumption of royalty or overlordship, and the putting on at that function of the belt and its appanage, being a similar performance to an act of enthronement.

M. Henri Gauthier has a lengthy article upon the title given to various personages of *Ami-Ra-Akhnute* and its diverse attributions. The question of interest he deems to have decided is not so much the official title of *Ami-Ra* as that of the complete significance of the term *Akhnute*, which many years ago Egyptologists decided was a definition for a particularly private chamber, or a select portion of some edifice, generally that of a royal palace.

M. Gauthier agrees with this rendering, but is also able, by carefully collected textual quotations, to prove that there were a number of other places, such as official bureaus, registrar offices, and safe deposit chambers, which were known to the Egyptians as *Akhnute*. In fact, he succeeds in citing from inscriptions the titles of some score of *Ami-Ra* officials belonging to as many different departments qualified as an *Akhnute* chamber, or department, in buildings of various characters.

The *Akhnute*, of which this personage was presiding officer, or custodian, appears to have been a "Selamlik," and so not a saloon of such a private nature, or of such forbidden access to the public, as the word usually signifies. For it is certain that as a rule admission to an *Akhnute* was only obtained for some special reason, or by privileged people. It should be mentioned it was sometimes used as a name for the royal nursery.

When M. Loret wrote upon the subject he only enumerated some four or five different *Akhnutes*, but starting from the Hood-Wilbur papyrus, edited by Sir Gaston Maspero as the "Hierarchie," M. Gauthier gives some sixty instances of these officials, but without any distinctive statement as to the nature of their *Akhnutes*.

In his second chapter he gives those whose names are followed by determinative qualifications, such as *Ami Ra* of the "Preposé au Pays du Nord," and those of the "White House" and "Golden House."

One title new to us is that of the *Ami Ra Akhnoute* of the *Kherp hatu*, which M. Gauthier thinks applies to some further special palace apartments. Another chapter endeavours, by a comparison of numerous texts, to define what were the duties of the various grades of *Ami Ra* of *Akhnutes*.

The second fascicule of Vol. XVI, 1919, of the *Bulletin de l'Institut Française d'Archéologie Orientale* of Cairo is mainly occupied with the completion of Mr. K. A. C. Cresswell's article entitled "A brief Chronology of the Mohammadan Monuments of Egypt to A.D. 1517."

From the industrious pen of M. Henri Gauthier there is a description of a large number of inscribed Funerary Cones, found upon the eastern slope of the hill of Gournet el-Medineh at Thebes. The inscriptions upon them and upon those previously edited in various journals or museum catalogues now present some thirteen variant types of texts. Of these no less than six are derived from the numerous specimens now for the first time reproduced by M. Gauthier. He reproduces those of a *chef de bureau*, named Amonemapit (or Amonemat), who, like many other Egyptian people of importance, especially officials, enjoyed the honorific title of  [—], and M. Gauthier thoroughly threshes out the probable meaning of it, rendering it *khrd kep*, "child of the nursery." That is to say, he had in youth been one of the playmates of the royal children, or perhaps it may mean that his mother having been wet nurse to a royal infant, he was also reared in the court nursery.

Two very valuable essays are provided by M. Jean Clédat, "Pour la Conquête de l'Égypte," and "Notes sur l'Isthme de Suez." The first is a full account of Egyptian methods of defence and offence upon the present Suez Canal route frontier, in ancient times, including the Ptolemaic and Roman periods. The geographical peculiarities of the district between the eastern Delta and Palestine are explained, quotations from papyri and inscriptions utilised, and notes upon various campaigns which opened or closed within this area are given, as well as quotations from the reports and diaries of travellers and officials, frontier officers and fugitives, such as Saneha.

M. Clédat is profoundly impressed by the splendid British engineering achievement by which fresh water is conveyed across the desert mounds and valleys, all the way from Kantara to El Arish. It carries the precious fluid for 150 kilometres, and is one of the most beneficent works of modern times. Yet British-like we have never even described its design and equipment, much less boasted of the matter, though the French journal *Illustration* has done so.

The notes upon the Isthmus of Suez are of much more importance than their title would suggest. The first is upon a Persian stele at Qabret. But few words remain of the inscription it once bore; one of these is that for Satrap, and some others refer to the Tamahou country. The remains of a Byzantine fortress at the same locality are illustrated by a plan.

Two steles of Rameses II are described ; they mention the semi-Asiatic deities of Sutek, Anta, Baal and Sopdt, " master of the Orient land," who in a relief presents those countries to the Pharaoh.

Section 4 of this paper gives a ground plan and a detailed account of a Migdol watch tower fort, the innermost of three halls in which was employed as a temple in the time of Rameses II. Part was used as a storehouse, seven large vases being provided for holding grain.

Section 5 refers to the Israelite passage of the Red Sea, and because of M. Clédat's special knowledge of the districts concerned, is of very great value ; he gives an excellent map. He has been impressed by the very excellent work of the late M. Léon Cart, a Swiss archæologist and traveller, but M. Clédat addresses himself to ascertaining the true situation and the Egyptian title for every place-name in the Bible narrative. His work is additional to the previous attempts of this kind by Lieblein, Naville and Daressy, and previous to Dr. Alan Gardiner's treatise upon the City of Rameses, published this year in the *Journal of Egyptian Archaeology*. M. Clédat does not mention the topographical papyrus in the Cairo Museum summarised by Dr. Spiegelberg, but it is doubtless well known to him, nor the geographical details in the Arezzo manuscript of a Palestine pilgrimage, but he gives every important old Egyptian record its place.

The final paper is by Prof. Edouard Naville upon the "First Words of Chapter XVII of the Book of the Dead." After a long and convincing argument he decides for rendering them "I am Atum, I was alone (or the unique one) when I rose up from Nu. I am the past (yesterday) and I know what shall be the future (to-morrow)." The resemblance of the phrase to the "I am yesterday, to-day and to-morrow," and the priestess of Dodona's dictum, "Zeus was, Zeus is, and Zeus is to be," will naturally occur to many.

M. Naville takes the opportunity to enlarge upon the manner as well as matter of Egyptian monumental and manuscript writing. He concludes that wall inscriptions were executed vertically because engraved or painted from a ladder, and shows by the arrangements when copied upon papyrus, that the roll was placed upon the knees of the scribe, as is the case in Egypt to-day. He also gives valuable information as to the method and the results of the adoption of Demotic scripts. What he says about the appliance used for scribes or sculptors writing upon chamber or temple and palace walls is interesting, because if the Hittites used scaffolds going the whole length of the space to be covered, instead of ladders, it might account for their boustrophedon plan of writing. The scribe having got to the end of the wall, instead of walking back and recommencing at the other end, simply continued his text, working backward beneath (or above) the previous line.

The final essay is by the veteran M. Loret, "À propos d'un prétendu verbe irrégulier."

JOSEPH OFFORD.

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#### NOTE.

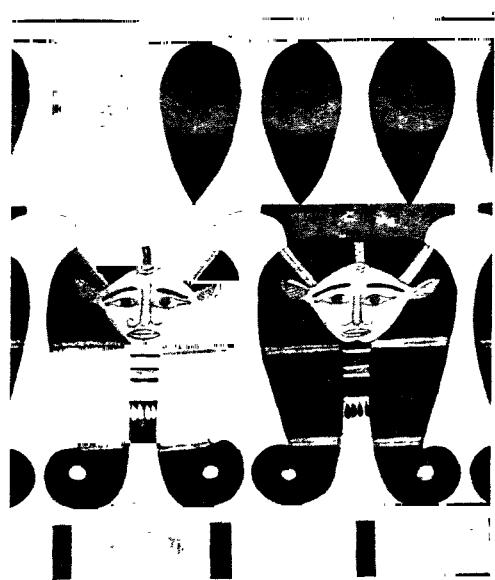
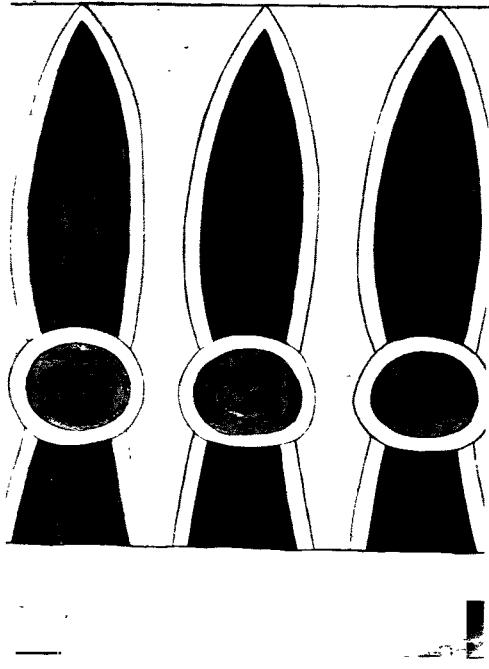
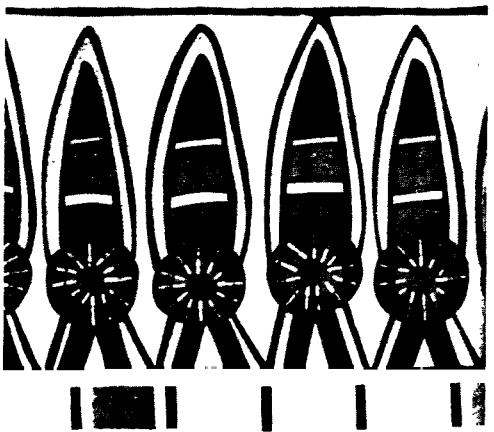
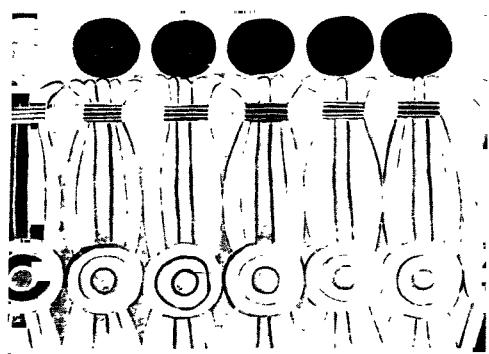
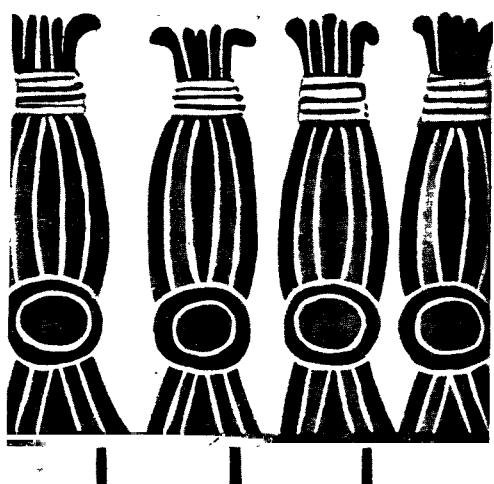
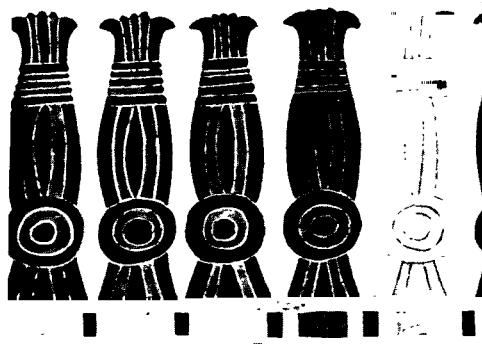
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WE regret to say that owing to the length of negotiations about the division of our discoveries at the Cairo Museum, it has been impossible to have an exhibition this year. The boxes have not yet arrived by the end of July, but we hope to include the objects from this year in next year's exhibition.

W. M. F. P.



KHEKER FRIEZES.



1. XII. XVIII DYNASTIES, p. 111.
3. LATE XVIII. XIX DYNASTIES, p. 115.
5. XX DYNASTY, p. 118.

2. MID XVIII DYNASTY, p. 112.
4. TOMB 78. LATE XVIII, p. 117.
6. TOMB 71. MID XVIII, p. 120.

# ANCIENT EGYPT.

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## THE GENESIS OF COPTIC TWISTS AND PLAITS.

A STUDY of the development of plaited ornament as a decorative motive is one full of interest, and one which, in the past, has occupied the attention of far too few. Work along these by-paths of research is often useful, and may always be considered as legitimately supplementing the pioneer work of the archæologist.

The wonderful spread—one might almost term it epidemic—of the use of plait motives throughout Europe in the early centuries has, of course, been noticed and commented upon. But Prof. Lethaby is, I think, the only one who has suggested<sup>1</sup> that it is to Egypt we must look for the rise and spread of this truly wonderful development.

This considered opinion of a man who has made a life-long study of the evolution of design needs no support from me. But, on the other hand, it certainly lends a greatly added interest to our study of Egypto-Roman art, insomuch as we now know that we are at work upon things more rare than usual, the early links of a chain of rich fancy, which has given us the beautiful interlacing of Celtic and Scandinavian art, the knots and borders of Longobardic sculpture, of the Roman pavements and Byzantine panels, no less than the clever grotesques of the MSS. of the Slavic races.

It is really a matter of regret that the Professor left his enquiry where he did, for clearly there must be an origin for the elements which are so frequent in the art of Coptic times.

The present paper, then, is an attempt to glean a sheaf of scattered vestiges from more ancient times, which, even though imperfectly, will nevertheless give indication of the probable sources from whence the Copts drew their early ideas of plaited ornament.

That the *invention* of the plait is not to be ascribed to the Copts themselves must be premised. Nevertheless we are here but a step removed from the centre whence the plait went forth to the enrichment of European art, and an enquiry into the origins of some of the forms as they are found frequently on Coptic cloths, will at the same time deal with the broader question of the cultural influences at work in Roman times in Egypt.

The simplest motive, and the one from which it would seem obvious that the plait must have originally developed, is the simple twist (Fig. 1). It is surprising, indeed, that so obvious and simple a decorative contrivance should

<sup>1</sup> Lethaby, W. R., "The origin of Knotted Ornamentation," *The Burlington Magazine*, X, 1907.

be so persistently absent from archaic art. Not, of course, that it is entirely absent ; but, considering the great frequency of, for example, the meander and fret in Greek, and even dynastic Egyptian art, it is notable that examples of the twist are curiously few and far between.

Nevertheless, there are well attested examples of the occurrence in pre-Coptic times of twists not only of single strands, as in Fig. 1, but also of double and triple strands that parallel the two twists of Coptic age shown in Figs. 2 and 3.

It is significant that, although not very frequently, it is found in Greek as well as Egyptian design, as witness Fig. 4, a twist of single strands from an early Attic vase in the Metropolitan Museum, New York (first half of the VIIth century, B.C.)<sup>1</sup> and Fig. 5, from a Corinthian vase in the Louvre (VIth century, B.C.) a twist of double strands. The single twist in Egypt may be exemplified by Fig. 6, found rarely on scarabs of the Middle Kingdom, and Fig. 7 from a Kalum pot (XIIth–XIIIth dynasty). Fig. 8, a scarab of the Hyksos period may be looked upon as a link with the XIIth dynasty scarab, Fig. 9.

But it is to the Cylinder seals of ancient Babylonia that we must look for the earliest examples of the twist. In Syro-Cappadocian and Sumerian times it is of frequent occurrence. Yet here we are confronted, it would seem, with something more significant than a mere decoration. What exactly is the significance one cannot tell at present, but usually when it occurs on the cylinders it is not as a border. It is a complete figure, a twist of several nodes, the number varying from three to eight. Fig. 10, a twist of five nodes, is from a Sumerian cylinder<sup>2</sup> and is therefore at least as old as the VIth Egyptian dynasty ; fig. 12 is from the cylinder of the pre-Hyksos king Khandy, and 13 from a scarab of Apepy. Having found no twist of earlier age than these we are compelled to pause. As for its ultimate origin and symbolism it would seem probable that it may be closely associated with serpent worship (see Fig. 11) from a Sumerian vase.<sup>3</sup> Of the serpent I shall have something more to say. At present we may compare Figs. 10, 11 and 12 with Figs. 14 and 15 from Coptic cloths. I think the deduction is inevitable. As for the channel of influence, the occurrence of the complete twist in Greek art would suggest it. Fig. 16, from a plate in the Cabinet des Médailles, Bib. Nat., Paris,<sup>4</sup> is of VIIth century, B.C., and Fig. 17 from an amphora in the British Museum, dating from the VIth century, B.C.

Passing from the twist to the *plait* one must recognise that therein we have evidence of a distinct advance, not only in conception, but also in designing skill. This cultural step being obvious, it is all the more surprising to find that, if not actually on Sumerian, yet on Syro-Cappadocian cylinders, the genuine plait is already evolved (Figs. 18 and 19)<sup>5</sup>. Strangely enough, except for one example, the true plait seems to be quite missing from Egyptian decoration of pre-Roman days. As in the case of the twist, the vehicle of its introduction into Egypto-Roman art was doubtless the art of ancient Greece ; for it is not infrequent on Grecian mouldings, the *guilloches* (Figs. 20–22), and occasionally on pottery. Fig. 21 is from a fragment of a vase from Naucratis (VIth century, B.C.)<sup>6</sup> and

<sup>1</sup> *Jour. Hell. Stud.*, XXXII, 1912, p. 370.

<sup>2</sup> Delaporte, L., *Cat. des Cylindres Orient.*, 1910, Pl. XIII, Fig. 154.

<sup>3</sup> King, L. W., *Sumer and Akkad*, Fig. 29, p. 76.

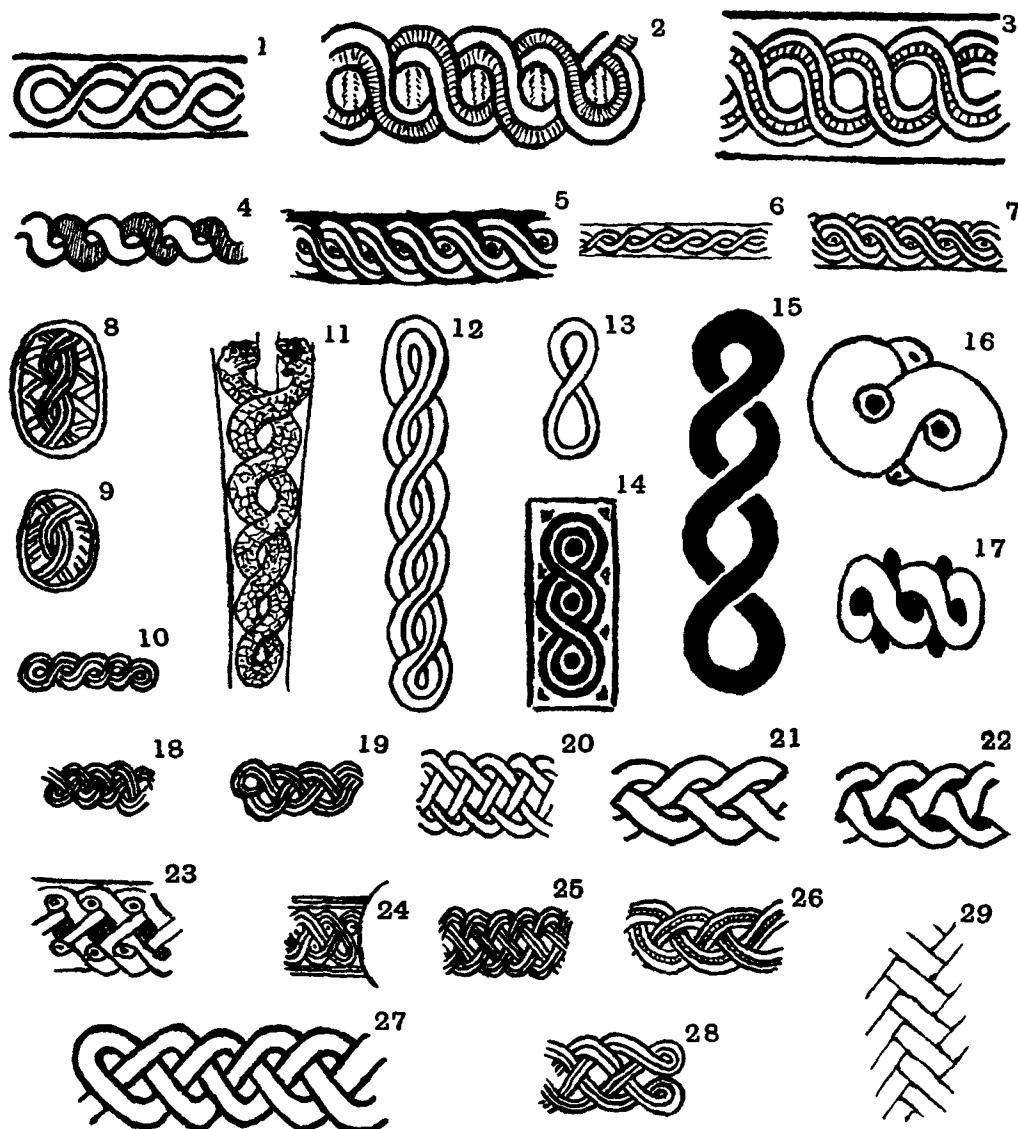
<sup>4</sup> *Bull. Corr. Hell.*, 1895, p. 74, Fig. 2.

<sup>5</sup> Delaporte, L., *Cat. des Cylind. Orient.*, 1910, Pl. XXIX, Figs. 418 and 425.

<sup>6</sup> *Bull. de la Corresp. Hell.*, 1895, p. 81, Fig. 5.

Fig. 24 from a Proto-Corinthian vase of about the same century.<sup>1</sup> I give here a four-strand plait from a cylinder from Aïden which is perhaps a trifle older and probably Phœnician origin, Fig. 25 (*circa* 700 B.C.), and for comparison illustrate specimens of three- and four-strand plaits taken from Egypto-Roman and Coptic cloths in the Victoria and Albert Museum (Figs. 26-28).

Vladimir Bok in his monograph on Coptic Textiles<sup>2</sup> states that "The plait is met with on ancient Egyptian monuments beginning with the XIIth dynasty."



This statement would be more misleading than it is were it published in any less difficult language than Russian. As it is I am inclined to think that he must have had in mind the twist rather than the plait. And yet there is one undoubtedly genuine example of ancient Egyptian plaitwork that can be seen any day at the British Museum. I refer to the plait design as it appears on the

<sup>1</sup> *Jour. Hell. Stud.*, XXXII, 1912, p. 341, Fig. 18.

<sup>2</sup> Бокъ, В. Г., *Коптския узорчатыя ткани*. Москва, 1897.

fragment of the beard of the Sphinx. Fig. 29 gives the scheme of plaiting which is clearly visible on the specimen.

We will next consider an interesting group of figures which occur frequently on textiles of Egypto-Roman and Coptic date, and which, although they vary in many ways, are yet apparently all related. A typical example of the IIIrd-IVth century on a fabric from Akhmin is shown in Fig. 30. A portion of a similar design of IVth-Vth century is given in Fig. 31, while Fig. 32, although quite dissimilar, is most probably a derivative from the same parent source, its less pronounced cruciform shape being probably due to its earlier date (IIInd-IIIrd century). The relation between these forms and the quite simple form, Figs. 33 and 34, will, I think, be apparent. But I imagine that in this simple form we have it in its pagan aspect. For it has persisted and is found in Celtic and Scandinavian ornament, where it was considered by Worsaae<sup>1</sup> to represent the earth with its four corners. Surrounding this Danish example is a serpent with its tail in its mouth, the great sea-serpent lying in the all-surrounding ocean. To revert to the Coptic examples, Figs. 30 and 31 have this form interplaited with the cross, no doubt used as a Christian symbol.

For the origin of this motive we must, I believe, again look to Sumer, although there are practically no directly connecting links, that I know of, if we except scarab designs of the type shown in Figs. 35 and 36 (after XIIth dynasty), and I think these are inconclusive. An interesting comparison may, however, be made with the Buddhist symbol shown in Figs. 37 and 38. This is one of the Eight Glorious Emblems or auspicious symbols frequently figured in Buddhist art and iconography.<sup>2</sup> It also occurs as the lucky diagram *Srivatsa*, the symbol of the tenth Jina (Sitala) of the Jains, and in China as the Buddhist knot (Chang), or the sacred entrails (Fig. 39).

This Chinese sign was doubtless introduced by the Buddhist missionaries who reached China in the 1st century A.D. How the symbol arrived in Buddhist India one can only surmise; but one cannot help remembering that Buddhism was still in its infancy when, in 329 B.C., Alexander made his momentous inroad, an event which impressed Indian art and decoration most strongly. Also we know that commerce was carried on between India and Babylonia from quite early times, and we find that in the IIIrd century B.C. the famous Buddhist Emperor Asoka claimed that missions sent by him to Greek kingdoms had resulted in conversions to Buddhism. These facts prove an amount of intercourse quite sufficient to account for the passage of this symbol. And although apparently not to be found in Greek ornament, yet if we look from these examples to that shown in Fig. 40, we cannot but notice their striking resemblance. Moreover, I think I may suggest (with probability on my side), that in this Sumerian figure we have the prototype of even the Coptic examples.

The figure is taken from one of the three most ancient specimens of Sumerian glyptic art yet known, one of the seals of the patéi Lugaland (about VIth-VIIth dynasties Egyptian). The somewhat laboured attempt at an interpretation of this sign by M. Allotte de la Fuije<sup>3</sup> may, I think, be put aside. It is far more likely to be the expression of a religious idea than a cryptic rendering of the artist's name. It may even contain the idea of Worsaae of the four corners of the

<sup>1</sup> "Danish Arts."

<sup>2</sup> Waddell, *Buddhism in Thibet*, p. 392.

<sup>3</sup> *Rev. d'Assyri.*, VI, No. 4, p. 117.

earth, but I believe that all these knot figures embody the idea of eternity, or perhaps, at least, longevity.

There is one more motive found on Coptic textiles of which I must speak. I have left it until the last because it is perhaps the most interesting of all. Figs. 41 and 42 show it as it appears on Egypto-Roman and Coptic textiles, and it will be recognised immediately as a familiar motive not only on these fabrics but also on Roman mosaics from the IIInd century A.D. onwards. It is also of frequent occurrence later among Celtic and Scandinavian plaitwork as noticed by Dr. H. Colley March.<sup>1</sup> It is one of the seven World Ravishing Gems of Buddhism, and, in fact, is found so far afield as among the Mound builders of the American continent. It is sometimes called, in English, the duplex, in French *l'entrelac*, and Sarre enigmatically terms it the "Lieblingsmotive."

This motive, more elusive in archaic art than any, has yet I believe a history that may well be said to be more ancient than any other known symbol. For it is, I am convinced, derived directly from that ancient of days, the Swastika. That this is so can best be demonstrated by examples. Figs. 43 to 46 show the stages of development in as simple a form as can be. It could, of course, be proven at greater length, but the present is hardly the occasion. The Swastika is, of course, a universal symbol of fire and motion, *i.e.*, the sun; and its derivative must be allowed to have, in some measure at least, a similar significance in pagan symbolism.

I have mentioned its occurrence on Roman mosaics, and this is most significant for our enquiry. For we are thus swept right past Coptic and Egypto-Roman art without touching it, so to speak, and we find it on a 1st century mosaic at Pompeii (Fig. 47)<sup>2</sup> in the Isis temple, which was rebuilt after the earthquake of A.D. 63.

There would seem to be an entire absence of this motive from both Greek and ancient Egyptian ornament, but I give an illustration of a gold ring from Selinous<sup>3</sup> (*circa* 1500-1000 B.C.), which is sufficiently like to afford comparison (Fig. 48). And from Egypt I give an impression of a Kahun sealing (XIIth dynasty).<sup>4</sup> The latter (Fig. 47) is certainly half way between the Swastika form and our figure.

But for the identical motive we must come to more recent times than this last. Again we go to ancient Babylon for our illustration, and we find here not indeed the simple duplex, but an artistic conception obviously based upon the same theme (Fig. 50). Incidentally it may be observed that this is, so far as my investigations have gone, the earliest example of knot work yet known. It might well be thought to be from some Celtic or Scandinavian cross so excellent is it. But it is taken from a Syro-Cappadocian seal (dated *circa* 1926-2225 B.C.), in the Bibliothèque Nationale.<sup>5</sup> The fact that this is a design more complex than the simple duplex argues that the latter must, at some period, have preceded it. But to find it in an earlier age we must look to pre-mykenian Crete.

Sir Arthur Evans<sup>6</sup> tells us that "of the origins of our complex European culture this much at least can be confidently stated. The earliest extraneous sources on which it drew lay respectively in two directions—in the valley of the

<sup>1</sup> *Trans. Dorset Field Club*, XXV.

<sup>2</sup> From Riegl, A., *Stilfragen*, 1893, p. 310.

<sup>3</sup> Fougères, G., *Selinonte*, 1910, p. 42.

<sup>4</sup> Petrie, W. M. F., *Illahun*, 1889-90, Pl. X, No. 190.

<sup>5</sup> Babelon, E., *Gilde illus. du Cab. des Med.*, 1900, p. 32, and Delaporte, Pl. XXXVIII, Fig. 649.

<sup>6</sup> "New Archæolog. Lights on Orig. of Civilis. in Europe," *Smithsonian Report*, 1916.

Nile on one side, and in that of the Euphrates on the other." This being so we need not be surprised to find that here on the "doorstep of European civilisation" the duplex may be traced a step further back into the past. Fig. 51 represents the design of a steatite seal from Hagios Onuphrios,<sup>1</sup> and considered to date from the Early Minoan III period (IXth–Xth dynasties Egyptian). It will be seen that this design consists of the simple duplex with the addition of an interlaced square. If we now glance at the next figure we shall observe that the figures are identical, and yet this latter is from the IVth century Romano-British pavement at Wellow near Bath (Fig. 52). That the Cretan example is the prototype of the Roman there cannot be any doubt. A seal of ivory found at Hagia Triada, and dating from the second part of the 1st Minoan period, is illustrated by Mosso,<sup>2</sup> which appears also to be inscribed with this form.

Before concluding one more illustration must be referred to. It is shown in Fig. 53, and is taken from an asphalt relief discovered by de Morgan at Susa.<sup>3</sup> Dr. Capitan considers this to be an expression of the same idea, and it must be admitted that it is more than probable, for undoubtedly it is composed of two interplaited ovals. The fact of its being a representation of two serpents is, too, in my opinion, a point in favour of this. It is ascribed to the epoch of Naram Sin, equal to the IXth dynasty.

Looking back over the field of enquiry that has been covered it seems obvious that certain general conclusions may be deduced.

The Copts, and the Egypto-Romans before them, derived these decorative motives in their art, if not actually from Roman sources, at any rate from a common source with Rome. In this connection the significance of the evidence provided by the mosaics cannot be overestimated. For we know that the Romans obtained their art of mosaic from the Greeks about 80 years B.C. Moreover, we know that the source of inspiration was *Alexandria*, which town passed under Roman rule at that time.

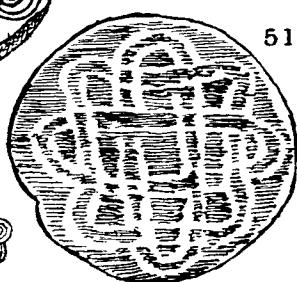
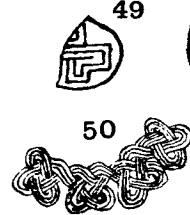
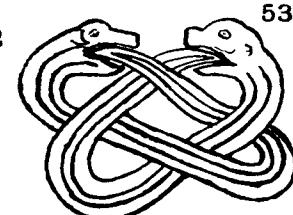
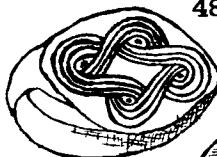
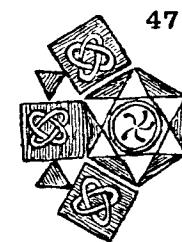
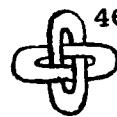
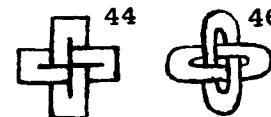
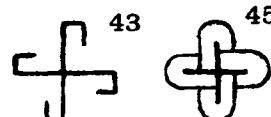
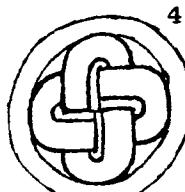
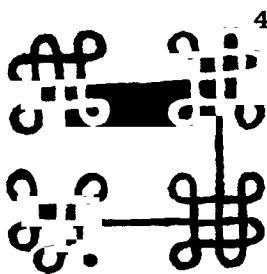
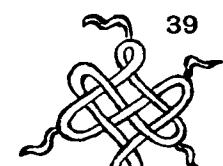
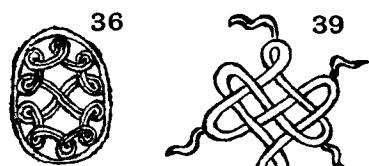
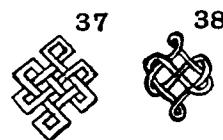
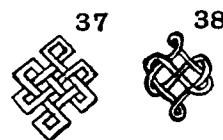
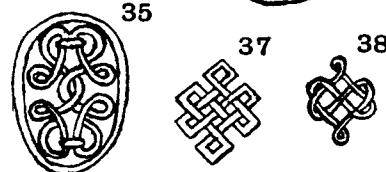
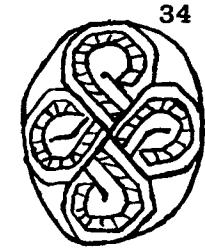
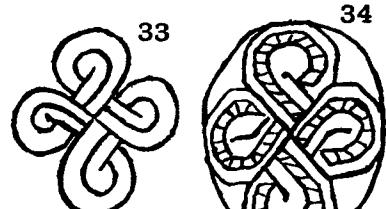
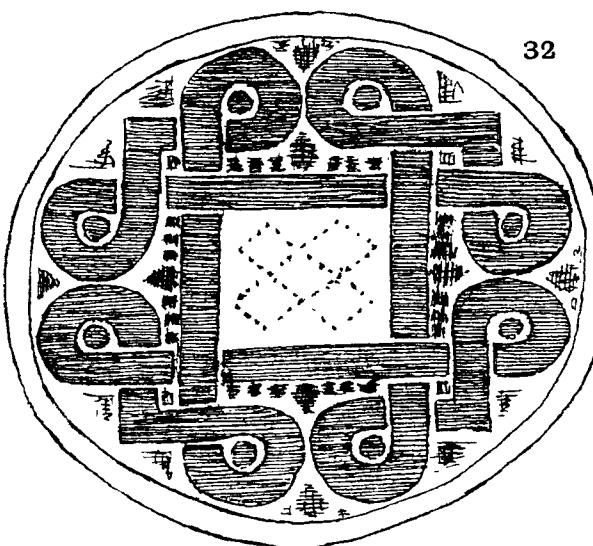
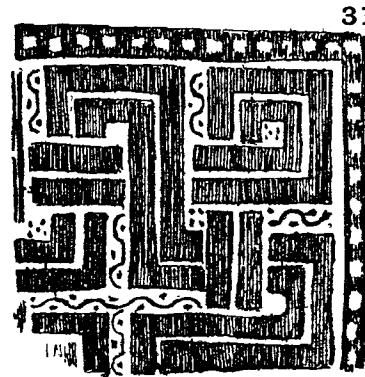
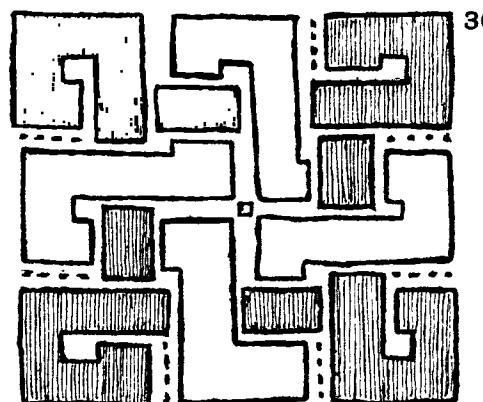
The decorative features we have been considering are in Egypt found with greatest frequency on the textile fabrics. But in Roman art they are most closely identified with the mosaic pavements. So much so that there is practically no doubt that the Romans derived them, with the art itself, from Alexandria.

We must therefore conclude that Egypt obtained her art inspirations from thence, also owing nothing to purely Roman but much to Romano-Alexandrian influence. What is more natural than that the city of Euclid should be the centre from whence these advanced designs should proceed, designs which, based upon the symbols of archaic cults, were revivified and developed in the hands of skilled artists. Alexandria's position made it a focus of influences from East and West. Not only Greeks, Romans and Egyptians, but representatives of eastern lands congregated within its precincts. There is no doubt that many ancient cults were tolerated, and may have brought into its decorative art the symbolism of archaic faiths. Of these quite the most popular was the cult of the Serpent, the Agathodaemon and Uraeus, sacred to Serapis and Isis. Shrines existed there whereat the cult was practised, and the two serpents are frequent features on coins of the period.

<sup>1</sup> Evans, A. J., *Cretan Pictographs*, 1895, p. 107, Fig. 84.

<sup>2</sup> Mosso, A., *Palaces of Crete*, 1907, p. 249, Fig. 117A.

<sup>3</sup> de Morgan, *Recherches. Del. Perse*, XII, Fig. 394, and XIII, Pl. XXXVII.



But we know that serpent worship was a prominent cult in the religious system of the Sumerians (refer back to Fig. 11), and with the ancient Persians we have seen that the two were linked into the prototype of the duplex. Space will not allow of exhaustive proof, but I am convinced that the motives we have been considering all originally embodied some phase of the cult of the serpent. The twist, the plait and the interplaited cross of ovals were all part of the ritual of the archaic counterpart of Isis and Osiris.

On Egypto-Roman and Coptic things they have, of course, lost their pagan significance, and are probably used merely as decorative motives—with one exception, the duplex. This, by virtue of its being cruciform and dual, was probably, as Dr. Colley March says, adopted as an emblem of the two-fold nature of Christ.

Whether this was so at so early a date is not certain. But it is certain that both in pagan and Christian art these non-terminant plait motives had the power of auspicious symbols, conveying the idea of good-luck. Particularly was this the case with the duplex; but we find, in these days, its popularity has waned—its parent, the Swastika, has outlived it.

CYRIL G. E. BUNT.

[These conclusions on the Sumerian being the earliest forms of the twists and plaits accords with other facts of their distribution. The formula which seems to agree with all the cases is that the twist and plait is a Central Asian motive (*see* the wickerwork screens in Kirghiz tents); that from there it passed down the Euphrates, also into Syria, and first into Egypt under Hyksos influence. Plaits and twists were unknown in Italy until the Dacian captives were brought in and set to mosaic work; plaits were brought from the north into the basket-work capitals of Justinian, and the round plait in architecture only occurs in true Gothic work in Italy, the Lombard plait being angular, rushwork and not osiers. In Ireland the spiral is alone in the pagan age, and the plait only comes in after Norse influences of the Christian period.—W. M. F. P.]

## THE SPHINXES OF TANIS.

IN the *Annales du Service*, 1917, M. Daressy opens the question of the peculiar type of art found in the sphinxes of Tanis, the fish-offerers and the Fayum statue. For figures of these see ANCIENT EGYPT, 1916, pp. 188-192, and plates. He points out that Zēn or Zoan is distinct from Hauar or Avaris in the Memphitic list, and that there is no reason to identify them ; and that the absence of any mention of Zon on the monuments of Tanis, and of any works of the great XVIIIth dynasty there, seems to show how unimportant the place was in early times. Suddenly in the XIXth dynasty it was started as a northern capital by Ramessu II, and filled with sculptures brought from other places. Of the early statues five have dedications belonging to *Onkhtau* at Memphis, the later works of Ramessu II were made for the Heliopolitan gods, and a statue is dedicated to Upuat of Siut and Hathor of Dronkah near by. From El Kab has come a sphinx in white silicified limestone exactly like the Tanite sphinxes in work and dimensions. All these facts result in detaching this peculiar style of work from Tanis, and suggest that it is more probably southern.



HEAD OF TANIS SPHINX.



HEAD OF GALLA WOMAN.

The ground is thus cleared of an hypothesis that has confused the subject for fifty years past. The southern source of such work at El Kab paves the way for our recognising in the "head of a Galla woman" (published in Maspero's "Struggle of the Nations," p. 233) the same type as in the sphinxes from Tanis. We require now an enquiry as to the sources and limits of this type in the south. Mr. Wainwright was struck by the similarity to the Tariesha, who were the body-guard of Osman Dagna, a Semitic African tribe.

If now we are to regard these sculptures as representing a Sudani people, it is clear that they belong to an invasion between the VIth and XIth dynasty, as there is no other period likely before the Hybros age when these figures were appropriated. The break-up of the Old Kingdom was due to Mesopotamians pressing in from the north—using button-badges, and to the Sudanis from the south, who took up Egyptian art for their own purposes. Similarly the break-up of the second prehistoric civilisation was both Elamite and Nubian; the end of the Bubastite age was invasion from Ethiopia and Libya. To the weak, misfortunes seldom come single.

W. M. F. PETRIE.

## ALEXANDRIAN WORLD MAPS.

As Alexandria was the centre of geographical learning where the world maps of Eratosthenes (*circa* 200 B.C.) and Ptolemy (*circa* 150 A.D.) were published, it may not be out of place to insert a short note on the possible survival of the former. The question of the authenticity of the actual maps accompanying the text of Ptolemy has recently been much discussed, but no one so far as I know has suggested the possibility that a copy of the earlier Hellenistic world scheme may still exist. There is in the Harleian collection in the British Museum a very remarkable map of the world drawn in the 9th or 10th centuries. It seems to be the work of an Anglo-Saxon scholar—that is, it must be his copy of an earlier map. The way the cities are represented within their walls has resemblances to the Madaba mosaic plan of Palestine, and the prominence of such places as Alexandria and Constantinople all show that there was a Byzantine or Hellenistic original. Another point of interest is the fact that some of the places in North Africa, to which Prof. Petrie called attention as being mentioned in the old tradition of the peopling of Britain, are named on this map.

The map of the world given in Prof. Breasted's *Ancient Times* (1916) as the world according to Eratosthenes, seems to me to have more than an accidental resemblance to our Saxon map. In it we have an oblong world surrounded by ocean; India is at one end, and the Mediterranean Sea enters at the other. It is still more remarkable in comparison with the Harleian map that the Caspian Sea is shown as connected with the ocean by an inlet from the north. Syria and Mesopotamia are near the centre of this world, which lies on the ocean as a rug rests on the floor. Furthermore, on the Saxon map there are a number of loosely-drawn lines, which are frequently roughly parallel, and at right angles to one another. The names of countries and cities seem to have been set down in relation to these lines, which indicate boundaries or position. Now Dr. Breasted writes of Eratosthenes: "His map of the known world, including Europe, Asia and Africa, not only showed the regions grouped about the Mediterranean with fair correctness, but he was the first geographer who was able to lay out on his map a cross-net of lines indicating latitude and longitude." It seems evident that the map in the Harleian collection must have had for its source a map with such lines upon it. It may be that the Saxon map follows some original constructed more or less in harmony with the theories of Cosmas, the 6th century traveller, who published at Alexandria his Christian scheme of geography about 550 A.D. It is probable, however, that Cosmas reverted to the flat-land of Eratosthenes rather than inventing it afresh, and in any case the Saxon map is too detailed and, indeed, too correct to depend on anything but a classical source. There is a photographic reproduction of the Harleian map in Trail's *Social England* and a small text block in the *Encyclopaedia Britannica* ("Maps").

## THE SUBTERRANEAN PASSAGES OF ALEPPO CITADEL.

ANCIENT Aleppo (the Egyptian Khalebu, the Greek Berœa) is supposed to have stood entirely on the partly natural, partly artificial mound now known as the Citadel, which measures 275 × 160 m. at the summit, and about 40 m. above the level of the town. This seems probable since no pre-Arab remains are to be seen in the town, although Aleppo is known from Egyptian and Babylonian records to have been of extreme antiquity.

Under the Arab rule of Malik ez-Zahir, the mound was fortified, or more probably re-fortified; a deep moat was dug round it and a strong defensive wall was built round the summit. The wall of Ez-Zahir still stands, but the interior of the Citadel is in ruins, the only modern building of any size being a Turkish barrack. The remainder is a mass of debris of Arab and Roman age which could easily be excavated now and would well repay a thorough examination.



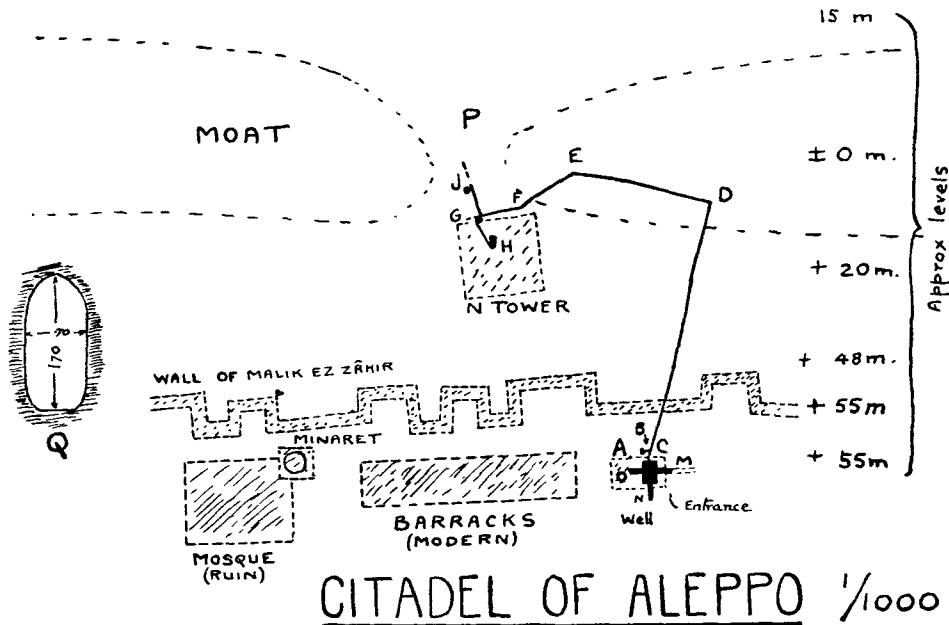
ALEPPO CITADEL FROM THE S.S.W.

The Arab Commanding Officer told me that he had found the entrance to subterranean passages near the barracks, and invited me to explore it as he was not keen on doing it alone. I accordingly called on him with Lieut. Lee-Brossé of the 1st Spahis. He first led us to a chamber (A) close to his quarters, at the east end of which was a large rectangular well, the top being solid masonry and about 4.50 m. north and south, by 3.75 m. east and west.

The Arab Officer then showed us the entrance to a gallery built against the outside of the east wall of the chamber. This gallery was almost stopped up with rubbish, and sloped downwards at an angle of about 20°. It soon turned to the left at right angles, and began to follow round the outside of the well in a counter-clockwise direction with windows opening into the well at intervals in each circuit. At first this gallery was in a very bad condition, but became better and freer of rubbish as we went down. After two circuits we came to a small vertical shaft which we climbed down, after which the passage, now much larger, and with a well-cut staircase the whole of its breadth (about 3½ m.) continued to wind downwards. At 16 m. depth the gallery was no longer built

in the rubbish, but cut in the soft limestone. This gives an approximate idea of the depth of artificial deposit on the Citadel. Although the passage was now in the rock, its tendency to crumble has necessitated arches and patches to hold up and hold back the dangerous portions. As we went still lower, the patches were made in pottery bricks, 0.23 m. long by 0.03 m. deep, which seem to be Roman. The level of the commencement of the pottery revetting was 26 m. below the ground level of the Citadel. About this level a gallery, now obstructed, appears to run southwards. At 30 m. we again came to a gallery having a masonry arch at the entrance, and then apparently running north in the rock. It is now totally stopped up with stones and rubbish. At 37.80 m., a very small passage opened out on the right of the main passage; the roof had fallen in many places and was very rotten. I crawled in for about 25 m. almost due north and found the end. It apparently was a trial gallery left uncompleted. A few metres farther on the main gallery ends in a pile of rubbish, though it may continue a little further. Here we went down a small vertical shaft, which could be covered by stone slabs which lay beside it. At a depth of 3.50 m. we reached a small horizontal passage (H) which went back under the main gallery for about 1.50 m. Here a larger gallery ran left and right. We first turned to the right, and after about 3 m. we came to the well, being now almost at the bottom of it (*i.e.*, within 7 ft.). I was lowered down into it and could see straight up the shaft; this was 41.34 m. below the surface of the Citadel. The curious part of the shaft was that the four sides were corrugated, and gave the effect of looking up the concertina extension of a kodak. The bottom of the well was partly filled with stones and filth dropped down from above, and beneath the shaft the depth of the water varied from a couple of inches to a foot. On the east, south and west sides of the bottom of the well, large galleries about 2 m. high and 1.50 broad, ran away for an unknown distance. The entrances of these had masonry arches, made without keystones, and the galleries themselves were well "rendered" with cement. I could not follow these more than about 10 m. as the water became deeper owing to there being less rubbish the farther one goes from the well-shaft. The stench was bad, but with thigh boots one should be able to follow these passages to their ends wherever they may be. These are shown at (M, N, O), in accompanying plan. It seems as if these were gigantic water conduits for the supply of the town. With sufficient time I believe that the exits of these conduits could be discovered even without following them internally, as they must communicate with the river somewhere. We only had three days at our disposal so it was out of the question for us to search further, as we had other work to do. We then returned to the branch passage at (B) which, as has been remarked, was about 2 m. above the water level of the well, and followed the passage (BD). The section of this gallery is shown at (Q), and the whole of it is very finely "rendered," its primary object being obviously a water-channel. After proceeding north for 58.50 m., it turns west for 31.40 m., and then southwest and west-south-west as shown at (DE, EF and FG). At (G) the passage turns sharply to the right. Here after 6.60 m. it is paved with large blocks. Below these blocks there is a small channel, 0.35 by 0.35 m. protected by a strong iron grating running forward. The whole gallery is obstructed about 1.30 m. further on, and no more progress was possible without excavation. At this place we found a limestone block 0.75 by 0.60 by 0.28 m., having a cufic inscription on it in relief, the block being upside down and not belonging to the masonry. Lieut. Brossé copied this as far as he could, and I can furnish a copy to anybody

who specializes in this class of inscriptions. At the point (J) there is a small hole opening out of the gallery. I squeezed through this, and found myself at the bottom of a circular shaft running vertically upwards (about 1 m. diameter, and 5.10 m. high). I climbed up this and found the top covered by large slabs of stone which I could not shift. I noticed the soil here was softer and more crumbling and earthy, which showed that the top of the shaft was no great distance below ground level. We then returned to the point (G) where a small opening led into another shaft running vertically upwards. This shaft, 1.20 diameter, was 7 m. high. At the top of the shaft on the north there was a sort of doorway of limestone about 0.80 m. wide, the jambs being smoothly dressed. We could not see the height owing to its being partially filled up with stones and rubbish. The right jamb of the door has a mason's mark, much resembling the



Egyptian 'onkh, 0.23 m. long. The chamber was almost entirely filled up, but could easily be cleared. On the other side of the shaft running up at an angle of about  $50^\circ$  and  $150^\circ$  east of north, was a large gallery roughly cut in the earthy limestone and 10 m. long. At the top of this, turning to the left, we could just squeeze into a small masonry antechamber (H). This was separated from an apparently larger chamber by a heavy basalt door, leaning at about  $60^\circ$  outwards from its frame which consisted of four blocks of basalt. The dimensions of the door were 1.38 m. high; 0.75 m. wide and 0.17 thick. On the west and on the inner side there is a cruciform recess for a bolt. Above this lock recess is a hole for the door pivot! The roof of the antechamber consists of a circular column of basalt. The inner chamber was very much obstructed by rubbish, but by crawling in I could see that the roof by the door consisted of basalt 0.42 m. diameter, and a square sectioned block of the same material. The inner chamber seems to lead into another smaller chamber roofed with slabs. This place was too unsafe to examine thoroughly, without a certain amount of clearing and shoring, which we had not time to do.

In the accompanying chart the dotted parts show the buildings, etc. above ground; they have been enlarged from a military map, and I do not vouch for

their accuracy. The underground passages were surveyed by us with a prismatic compass and are fairly accurate. It will be seen that the chamber at (H) comes nearly under the foundations of a small square Arab tower, now in ruins, on the slope of the Citadel. Point (H), however, must be at a much lower level, and be connected to the foundations of a more ancient building. (The Arab entrance to the north Tower was on its south side leading straight up into the Citadel. This was blocked up, and we could not find its other end in the Citadel.) At the point (J) the level of the moat is distinctly higher than elsewhere, and I do not think that the gallery at (J) is very deep below moat level. It is very probable that the passage runs out under the town.

I think the function of the gallery (B D E F G J) was to fill the moat. This would be done automatically when the water rose to sufficient height in the well. The subsidiary passages and shafts (J and H) were probably cut to connect buildings then standing with the Citadel, making the conduits serve a double purpose. That danger of invasion from these passages was apprehended is obvious, since in the spiral well passage small shafts, mentioned earlier, were constructed, so that the passage up into the Citadel could be easily blocked. As to the date, although the Arabs may have added and adapted certain parts of it, I cannot think that this was their original work. It certainly would repay a detailed examination, as all the rubbish could be basketed along into the well chamber and removed from there.

I can get no information as to whether this has been examined before; the local inhabitants are entirely ignorant of it, except that one old Arab told that the Citadel was connected underground with the Bāb Antakiyeh. It is possible that the Turks or Germans during the war may have examined these passages. I should be very glad to hear if anything is known further of this matter.

R. ENGELBACH,  
Capt. R.E. (T.R.).

## KHEKER FRIEZES.

[Number references are to the "Topographical Catalogue of Private Tombs of Thebes," by Gardiner and Weigall. A.E., *Ancient Egypt*. C.F.Y., Carnarvon, *Five Years' Explorations at Thebes*. D.P., Davies, *Ptah-hetep*. K. King's Tomb. L.D., Lepsius, *Denkmäler*. P.D.A., Petrie, *Decorative Art*. Q., Queen's Tomb.]

THE extreme upper portions of the walls of painted and sculptured tombs in the XIIth and XVIIIth dynasty, and also more rarely in later times, were usually finished off with a peculiar form of decoration, commonly known as the Kheker ornament.

The word Kheker occurs fairly often both in Old Kingdom and in later hieroglyphs in connection with the toilet, and also in the plural form as *Khekeru*, meaning *ornament*, which word has the figure of a Kheker as its determinative. It is this word for *ornament* that has given its name to this distinctive variety of Egyptian ornamentation.

The form of the Kheker most often thus employed in the Theban Necropolis is that shown in Fig. 1, where it seems to represent a series of reed or plant stems tied together at the tops and gathered in again close above the base, below which they spread out once more. Another suggestion for the meaning of this decoration is that it represents the fringe or tassel of a carpet or mat, the roundel above the base being a knot. The plant theory is probably the more satisfactory explanation of the form and was first suggested by Prof. Petrie, who wrote: "Suppose a screen of papyrus stems, the roofing stems tied on to the uprights and the loose wiry leaves at the head tied together to keep them from straggling over and looking untidy. Here we have all the details of the Kheker ornament simply resulting from structural necessity. The leaves are gathered together at the lower tying; and there the end view of the concentric coats of the papyrus stems of the roof are seen as concentric circles, above which the leaves bulge out and are tied together at the top." (P.D.A., 101-2.)

This view of the origin of the Kheker ornament finds support in the fact that the Kheker frieze is practically always found at the top of a wall in a tomb. It occurs, moreover, in painted scenes as a free standing ornament to the tops of doorways and shrines when such are depicted on tomb walls (111 and Q. 36, 44, 52, 55). In three instances (Puimre, Amunek, Menkheperasenb, and perhaps more), however, a row of Khekers serves as a kind of low square fence or enclosure in the scenes of funeral ceremonies in the inner chambers of Tombs 39, 84 and 112. It is also to be seen running down one side of the interior of a shrine in Tomb Q. 52, Thyi. In the tombs of the Old Kingdom no example is known of the use of a Kheker frieze to ornament the upper portion of the walls of a tomb, although it is employed to decorate the tops of shrines and doorways, etc., when such are depicted on the tomb walls. The Kheker is always of the pointed variety, very similar to that shown in Fig. 4, in shape but not in colour, but usually with two roundels

at the bottom, placed one below the other, of which the lower one takes the place of the base of an ordinary Kheker (L.D. ii, 101). In the tomb of Ptah-hetep, however, a Kheker with the base as shown in Fig. 5 is used for the sign WSHT (D.P., I, xviii).

A peculiar headdress sometimes worn by dancers in scenes in the tombs of the Middle Kingdom is also suggestive of the Kheker ornament, especially its upper portion (C.F.Y. viii; A.E. 1914, 126).

In the Middle Kingdom when the Khekters began to be employed as a frieze for tomb walls, the splay-topped form was that most commonly in use (Fig. 1). This variety is also the most common in tombs of the XVIIIth dynasty in the Theban Necropolis, though the pointed variety is still employed in minor positions. During Ramesside times, the pointed form reappears again as a frieze, but only in the Royal Tombs, the splay-topped form still remaining in use in the private tombs.

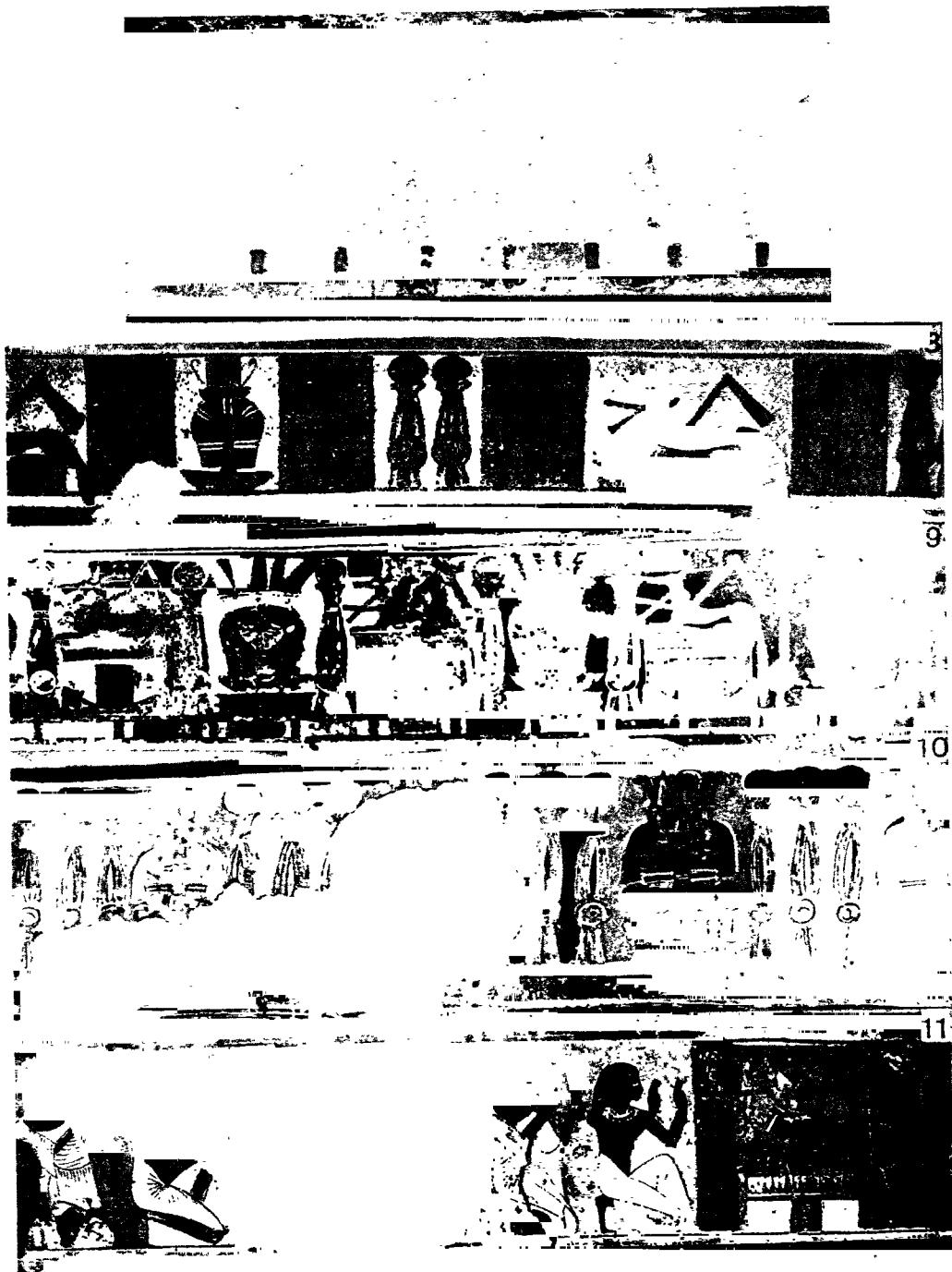
Splay-topped Khekters are always drawn at the top of a tomb wall in a row, with their bases touching, or almost touching, one another. The colouring until rather beyond the middle of the XVIIIth dynasty is constant, namely, blue outside, red inside and green between, the tie bands being similarly coloured with bands of blue and green above and below a middle band of red, five bands in all. The roundel at the base is also painted with an outer circular band of blue, an inner one of green and a red centre.

Towards the end of the XVIIIth dynasty and also in the Ramesside period, the roundels of the Kheker ornament were commonly painted of one colour only, red or yellow, though the remaining portion of the Kheker was coloured in the old way. We have, however, six exceptions in the Necropolis in Tombs 38, 76, 77, 91, 147 and K. 22. In the last of these tombs the Khekters forming the frieze at the northern end of the outer chamber are coloured blue, green and white. It is possible, however, that it was intended to eventually add red, and thus give the frieze the normal colouring. In the roundels of the Khekters in Tombs 76, 77, 91, 147 and K. 22 only two colours were intended and used, *i.e.*, red and blue, the red being in the centre and predominating.

In some of the tombs of the end of the XVIIIth dynasty, and in most of those of Ramesside date, instead of being painted with the usual stripes of blue, green and red, the tie of the Kheker is painted entirely in yellow and the stripes or bands are indicated by lines of red or black (Fig. 2). The earliest date at which the yellow tie first appears in Khekters in the Theban Necropolis is the time of Thutmosis III (Tomb 112), but it appears more frequently in the time of Thutmosis IV, as may be seen in Tombs 58, 75, 76, 77, 89, 90, 91, 116, etc., though in some tombs of this date, and even later, the usual five coloured bands are still to be seen. In three tombs (76, 84, 112) Khekters with the usual blue, green and red ties are found on some of the walls, while on others the ties are coloured yellow. It is interesting to note that the lines drawn on the yellow ties to represent the former bands of colour are not always true as to number, showing that the old features were already being forgotten.

In most cases, as shown in uncompleted tombs, the Kheker pattern was set out with the aid of six horizontal lines, the top and bottom ones of which determined the height of the Kheker. The two lines below the top one marked out the proper width of the tie, and the remaining two fixed the position of the roundel at the base of the ornament. These lines were always set out with the aid of a cord soaked in red ruddle (21, 22, 43, 78, 82, 112, King Haremheb).

Owing to the irregularity of the ceiling, only five of these horizontal lines were drawn in some tombs, the usual top line being omitted, with the result that the height of the Kheker frieze varies considerably on the same wall. The usual



7, TOMB 88; 8, TOMB 255; 9, TOMB 51; 10, 11, TOMB 45.

reasons for this were either poor work or the excessive hardness of the rock which prevented a level ceiling being cut.

In Tomb 82 there are seven horizontal lines provided for the proportioning of the Kheker frieze, the extra one running through the middle of the roundel. There are also seven lines in Tomb 78, the seventh line marking the width of a disc over the Kheker.

It rarely happened that the artist kept strictly to these lines. The top of the Kheker frequently projects above the top line and the roundel is frequently below the space provided for it between the two guiding lines. It would appear, therefore, that these horizontal lines sometimes served as rough guides only and not as definite boundaries. Hence the great variation in the position of the roundel and tie that is often met with in the Khekers on the same wall.

The distance between the topmost and lowest horizontal lines is found to vary greatly. Taking a number of these distances and averaging them, it has been found that the three heights for the Kheker frieze that were most commonly in use were 180, 196, and 204 millimetres.

In careful work, three, and sometimes five vertical lines were also drawn on a tomb wall to ensure the proper width and proportion being given to each Kheker. In every case these lines were carefully drawn in red paint with a fine brush, which lead to their being easily obscured when the background was painted in. When three lines were used the middle one ran down the centre of the Kheker and the remaining two fixed its outer limits. In cases where five lines were employed, the additional two marked the inner edge of the blue stripe, which in most cases splay outwards at the extreme top of the Kheker. It is probable that these vertical lines were utilised in most of the tombs which show better workmanship, but, if so, they have in most cases been obscured by the background, which as a rule was painted in last, doubtless for this purpose. Tombs in which these lines can still be seen are Nos. 22, 87, 88, 112, 201 and 251.

Lines for the spacing of pointed Khekters (four in number) can be seen in Q. 38, and it may be noted here that as pointed Khekters have no ties, four lines are sufficient to set them out.

On one wall at least in the inner chamber of Tomb 42 (Amenmose), the Kheker frieze was drawn on similar squares to those used for the purpose of figure drawing. This was a very unusual proceeding in the Theban Necropolis, and there is apparently only the one example.

In rough work, the whole Kheker was merely outlined in red before the colours were applied, but in the more carefully finished tombs additional lines were added to mark the limits of the coloured bands (Tombs 42, 72, 77, 89, 201, etc.).

In most cases after the colours of the Khekters were painted in, a white line was placed over the edges of the stripes of colour to hide their junction and also to emphasise their colours. These white lines were very carefully put on in some tombs and in others very roughly, so that they vary much in thickness and regularity. The outside of the Kheker was rarely outlined in white, with the exception of the margin of the roundel.

In one tomb (42) the artist evidently ran short of red paint when drawing the outlines of his Khekters and employed blue instead for the purpose.

It seems that the Kheker ornament in a few of the better finished tombs was subject to definite proportions, as in the case of human figures. For instance, the top of the ornament from the tie upwards should be equal in height to that of the base as measured downwards from the bottom of the roundel; also the depth of the tie should be the same as that of the top and base. The diameter

of the roundel was generally half as wide again as the height of the upper portion, base and tie of the Kheker when drawn perfectly round; in most tombs, however, it assumes a slightly elliptical form. The body of the Kheker appears not to have been subject to any definite proportions, hence the Kheker ornaments in various tombs on comparison show an apparent divergence in proportion, some appearing slightly attenuated and others the reverse in form.

The Kheker friezes in Tombs 45 and 260 present a peculiar feature which the writer has not been able to find in any other tomb, namely, three small black spots placed above the three middle bands of colours at the apex of the ornament and also a series of five similar spots down each vertical edge of the tie (*see* six on left of Fig. 1). It appears to have been a refinement in the decoration that was very rarely carried out, as, in the two tombs in which this addition appears, not all the Khekters were treated in this manner. As the two tombs in which these spotted Khekters appear are more than a mile apart and, curiously enough, similar tombs nearly always lie near together, it does not seem probable that they were the work of the same artist, neither do they agree in style.

A curious addition was made to the splay-topped Kheker at the close of the XVIIIth dynasty, namely, a round ball placed on the top of the ornament (Fig. 3). The earliest date at which this is met with in this Necropolis is that of the tombs of Surere Ramōse and Ramōse,<sup>1</sup> and of one tomb in which the name is erased, the first two being of the time of Amenophis III, and the third and fourth of that of Amenophis IV. As this addition to the Kheker is not found in any tomb of earlier date than those mentioned above, it might well be possible that foreign influence had something to do with its appearance. There seems no doubt that this ball at the top of the Kheker represented the sun, or rather the disc of the sun, and on that account it was invariably painted red or yellow, and was always undecorated. This was probably due to the Aten influence shortly before; the new addition to the Kheker came into general use in Ramesside times, when the Kheker ornament, used in conjunction with other friezes, was a common feature in tombs, especially in those of the period of Rameses II.

It would appear that it became the custom in the period of Amenophis III-IV to colour the roundel of the Kheker either red or yellow and no longer to decorate it with the usual circular bands and centre of blue, green and red. The sculptured roundels of the Khekters in Tomb 48 (Surere) are unfortunately not painted, but, as they are not incised with the chisel in concentric rings, it would appear that they were intended to be painted one colour only. The roundels of the Khekters in Tomb 192 (Kharuef) were, however, both sculptured and ornamented with coloured concentric rings. This disc form of the roundel was also usual in Ramesside tombs, with the exceptions that in Tomb 216 the roundel is painted blue, and in Tombs 19, 35, 112, 134, 135, 220, 148 and 259 the old colouring is retained. A marked deterioration from the graceful shape of the early Kheker is noticeable in Ramesside times in the Theban Necropolis, not only in the smaller tombs, but even in the more important ones. For instance, probably owing to the non-use of the usual five or six horizontal lines which helped the

<sup>1</sup> There are two tombs with the name of Ramōse. One of these (No. 46) cannot be strictly dated, but has been assigned by Dr. Gardiner in consideration of style, etc., to the period of Amenophis III. In this tomb the ordinary Kheker with a yellow roundel and the Kheker with yellow roundel and yellow disc are both employed, the former in the outer chamber or corridor of the tomb and the latter in the inner chamber. (Nos. 48, 46, 55 and 188.)

artist to proportion his ornament, the Kheker tends to become more and more slender in appearance, especially at the top, where it is drawn in by the tie. Sometimes, also, the very order of the colours which was insisted on in the XVIIIth dynasty was altered by inserting an extra band of colour, as in Tombs 19, 31, 45, 106, 134, 135, 255, etc., or by the reversal of the greens and blues, the latter error being found in only one tomb (No. 30, Khensemose).

There are two interesting examples in the Necropolis of Khekers outside the periods of the XVIIIth, XIXth and XXth dynasties. The first is found in Tomb 60 (Antefoker), which belongs to the XIIth dynasty. In every respect the Kheker ornament in this tomb corresponds with those of the later periods, with the one exception that the blue outer band, now almost faded away, is outside the tie and not within it. The second example is in Tomb 36 (Aba), which is of the XXVIth dynasty, where the Kheker conforms to the usual shape but the arrangement of the colours is different. Instead of the ornament being coloured blue, green and red, reading from the outside, the order of the colours is in this case, blue, red and blue, the roundel being correspondingly treated. In other parts of the same tomb the Khekters are painted entirely yellow.

It has already been mentioned that the Kheker ornament ran along the extreme top of a wall, but there are exceptions to be found in Tombs 35, 161 and 254. In the first tomb, the ornament is placed below a floral frieze and separated from it by a broad band of blue. The second tomb, on the western end, also has a floral frieze with a Kheker frieze beneath it, and the last tomb has a broad band of Chequer pattern above the Kheker frieze, consisting of seven rows of small coloured squares alternating with white squares, each row being of one colour only, blue, green and red. On the two side walls of the western end of this tomb there is also a band of yellow above the Kheker frieze.

A similar use of yellow may be seen above parts of the frieze in the inner chamber of Tomb 147 (no name), where owing to the irregularity of the roof, a wide gap occurs in places between the top of the frieze and the ceiling. Rather than leave this bare, the decorator of the tomb coloured it with yellow.

In the tomb of Queen Nefertari a border painted to resemble sand is placed above the Khekters on some of the walls.

In four tombs (40, 64, 76 and 253) there is a thin band of ornamentation just below the ceiling line, known as "Tail-edging." This form of decoration is very rarely placed above a Kheker ornament, though it is common as vertical bands for the corners of tombs.

When the Kheker frieze is painted on the walls supporting a barrel-shaped or arched roof, it is sometimes put wholly or partially above the spring of the vaulting, which makes it appear to be part of the ceiling decoration and not that of the wall. In such barrel-vaulted chambers, it should be noted that the frieze follows a straight line across the two end walls at the same height as on the side walls, no attempt being made to make it follow the curve of the ceiling, except in the shrine of 93. A semi-circular space is, therefore, left above the frieze on the end walls which is generally filled in either with two figures of the deceased for whom the tomb was made, adoring a figure of Anubis couchant on a pedestal or with various figures of gods and emblematic signs.

In a few cases (38, 40, 43, 75, 90, 253, 254 and 258), the Kheker ornament is only found on some of the walls of a tomb, the corresponding portion of the walls being decorated with floral friezes. Both the pointed and splay-topped forms of Kheker are to be found together in three tombs (Nos. 42, 106 and 253),

the first case being especially interesting because the two kinds are actually to be seen on the same wall. In this connection, it should be noted that on one wall of Tomb 75 (Amenhotpe-si-se) a length of the Kheker frieze is found end to end with a strip of floral frieze.

Kheker friezes usually have a white or grey background, but there are exceptions, which may be seen in thirteen tombs (21, 26, 40, 46, 51, 55, 76, 89, 106, 130, 147, 253 and 259). In these tombs the colour of the background of the Kheker friezes is either red or yellow, in spite of the fact that the scenes below have the usual white or light-grey ground, except in the inner chambers or shrines of certain tombs, in which the background is yellow (21, 26, 40, 51, 55, 76, 89 and 253).

We even find in some tombs both coloured and white backgrounds for the Kheker ornament in the same chamber, though not on the same wall (76, 89 and 253).

The pointed form of the Kheker was the only form used in the Royal Tombs of Ramesside date, except in that of Sety I. It is also met with in nine of the tombs of the Nobles (39, 40, 42, 78, 85, 93, 106, 178 and 253), but, with the exception of four of these tombs (42, 78, 106 and 253), it occupies a very subordinate position. The pointed form first appears in this Necropolis as a frieze in tombs of about the time of Amenophis II (42, 85 and 93).

The colouring of these pointed Khekters varies considerably, and in no case does it resemble the colouring of the splay-topped, or ordinary type of Kheker, with the exception of Tomb 106 and the two Royal Tombs K. 22 and Q. 52. In five of the tombs of the Nobles (39, 40, 178 and 253) the pointed Khekters are only in two colours, either red (?) and blue, yellow (or red in 40) and blue, red and green or yellow and green, the arrangement being a broad mass of one of these colours in the middle of the Kheker, bordered on all the edges by a narrower band of a second colour. The roundels are treated in the same way, the centre of one colour being surrounded by a thin band of another colour. In two tombs (106 and 178) the roundels of this form of Kheker are painted wholly in yellow.

The pointed Khekters in Tomb 78 (Fig. 4) deserve special attention as nothing quite like them as regards the colouring is known elsewhere in the Necropolis. The middle portion of the upper part of the ornament is coloured in horizontal bands or rather blocks of blue, red and green separated by thin lines of yellow. The outer portions of the Kheker are painted yellow and the base is coloured in alternate bands of blue and yellow. The roundel, as will be noticed in the illustration, is a very elaborate one and consists of a blue centre surrounded by a ring of red with a ring of blue outside that again; it is further decorated with white radii. The various bands of colours, with the exception of those belonging to the roundel, are edged with thin lines of dark red.

In the Royal Tombs the pointed Kheker is coloured in much the same way as those noted in the tombs of the Nobles, that is, in two colours, one of which was used as a border. These are, however, two variants which are not to be found used in a Kheker frieze in the tombs of the Nobles, the first being decorated with thin vertical stripes of blue, red, blue, green, blue and red, the last being in the centre. The roundel and base are similarly treated with these colours. Here we have an arrangement of colouring very similar to that of the ordinary splay-topped Kheker, except that there are eleven vertical bands of colours instead of the normal five.

The second variety is that shown in Fig. 5, a blue Kheker ornamented with fine lines (either dark blue or black) and edged with yellow. This can be seen in Tombs K. 11, Q. 43 and Q. 55, except that the colouring is in the first of these two tombs green and yellow, and in the second and third blue and red, green and blue predominating in the respective cases. In the tomb of Amenophis III, pointed Khekters are only present on the columns and are ornamented in exactly the same way as the ordinary Kheker, the roundel being painted red and edged with blue.

As a general rule, the colour of the roundels of the pointed Khekters agrees with that of the remaining portion of the ornament, but in seven of the Royal Tombs (Q. 42, 43, 51, 52, 55, Siptah, Rameses III) the roundels are coloured red, wholly so in three of these tombs (Q. 43, 51, K. 11), and edged with yellow in the remaining four, the body of the Khekters being painted either green or blue and edged with yellow or white. In the case of Tomb Q. 51, however, the Kheker is blue and edged with red.

It is curious that none of the roundels of the pointed Khekters in the Royal Tombs are wholly painted yellow, seeing that this colour was so popular for the purpose in the splay-topped Khekters. Yellow was also never used as the dominant colour in a pointed Kheker, but was solely employed as an edging.

In no case, either, was a ball or disc placed on the top of a pointed Kheker, as is so common with the splay-topped type.

In the Royal Tombs pointed Khekters are provided with either red or grey backgrounds, the former being the most popular colour. Yellow was never employed as a background for this form of Kheker, though it was so used with the splay-topped form.

In tombs in which the scenes are carved among the tombs of the Nobles, the Kheker ornament is usually either merely painted on the smooth rock face or the bare outlines, and sometimes the divisions of the colours, are incised. In some cases the frieze is carved in relief, as may be seen in Tombs 48, 57, 55, 106, etc. In many sculptured tombs, the Kheker frieze is merely painted on some walls and on other walls in the same tomb is both carved and then painted. The reason for this was probably the necessity of finishing a tomb as soon as possible, either because the owner found the cost of sculpturing the whole of the decoration of his tomb too much for his resources or because he died before his tomb was completed.

As most of the Royal Tombs are very heavily plastered, the Khekters are frequently found to be cut in this plaster as well as being merely painted. This is most common in the tombs of the Queens.

#### TOMBS IN WHICH KHEKERS ARE FOUND WITH A DISC AT THE APEX (AS FIG. 3).

TOMB.	COLOUR OF DISC.	COLOUR OF ROUNDDEL.	DATE.
Seti I.	Yellow.	Yellow.	Seti I.
Haremhab.	Yellow.	Yellow.	Haremhab.
19.	Red.	Blue, green, blue and red.	Seti I.
23.	Yellow.	Red.	Meneptah.
26.	Yellow.	Yellow.	Rameses III.
30.	Red.	Red.	XIXth–XXth dynasty.
31.	Red.	Yellow.	Rameses II.

TOMB.	COLOUR OF DISC.	COLOUR OF ROUNDEL.	DATE.
35 (On cornice).	Red.	Blue, green and red.	Rameses II.
41.	?	Red.	Rameses to Seti.
46.	Yellow.	Yellow.	Amenophis III.
48.	Unpainted.	Unpainted.	Amenophis III.
49.	Blackened.	Blackened.	XIXth dynasty.
51.	Yellow.	Yellow.	Seti I.
55.	Yellow.	Yellow.	Amenophis III.
65.	Red.	Red.	Rameses X (?).
112.	Red.	Blue, green and red.	XIXth-XXth dynasty.
134.	Red.	Blue, green and red.	XIXth dynasty.
135.	Red.	Blue, green and red.	XIXth dynasty.
148 (Burnt).	Red (?).	Blue, green and red.	Rameses III-V.
157.	Blackened.	Blackened.	Rameses II.
158.	No colour.	No colour.	Menepkah.
159.	Yellow.	Red.	XIXth dynasty.
163.	Red.	Red.	XIXth dynasty.
178.	Red.	Yellow.	Rameses II.
188.	Uncertain.	Yellow.	Amenophis IV.
189 (Burnt).	Red (?).	Red (?).	Rameses II.
216.	Red (?).	Blue.	Rameses II.
220.	Red.	Blue, green and red.	XIXth-XXth dynasty.
255.	Red.	Yellow.	Haremhab.
259.	Yellow.	Blue, green and red.	Haremhab (?)

It will be seen from the foregoing list that out of a total of 25 tombs, after excluding the five, which are either blackened, uncoloured or doubtful, there are eight tombs with friezes of Khekters surmounted with a disc that still have their roundels painted in the old colours, namely, blue, green and red. In nine of the tombs the roundels agree in colour with that of their discs, and in five tombs the roundel is painted red if the disc is yellow or *vice versa*. It may be gathered from this list, therefore, that the colouring of the new feature of the disc did not always influence the colour of the roundel.

In two of these tombs (Nos. 148 and 189) it is difficult to tell whether the colour employed for the discs was originally red or yellow, owing to the tombs having been badly burnt, thus causing a possible change of yellow to red.

At the close of the XVIIIth dynasty the Kheker ornament often appears in conjunction with other symbols. When it is used in this manner it is always the splay-topped form that is the one employed, there being but two examples (Q. 51 and new Ramesside tomb of Foucart, 1918) in Thebes where the pointed variety of Kheker is so used.

The commonest design in friezes where Khekters are used with other figures is a Hathor head alternating with figures of Anubis couchant on a pedestal, the figures and heads being separated from each other by two or more Khekters. Next in order of popularity is a row of figures of Anubis on a pedestal, the figures being divided by groups of Khekters.

Only one example has up to the present been found where Hathor heads appear alone with Khekters, and this occurs as a frieze on the southern wall of Tomb 45. The Kheker ornament is also used to form a frieze with the symbols

Dad and Thet in the inner chamber of Tomb 65. Sometimes a frieze, other than a floral one, was made up without employing the Kheker in any way, as can be seen in Tombs 14, 16, 45, etc. With the exception of one tomb (No. 71, Senmut), all such tombs are of Ramesside date, and for convenience sake the style of ornament and the order in which the ornaments appear are given in an appended list, which also deals with those friezes in which Khekters are combined with other figures.

KHEKER ORNAMENT IN CONJUNCTION WITH REPRESENTATIONS OF THE GOD ANUBIS COUCHANT ON A PEDESTAL.

- Tomb 30. 1 Kheker, Anubis, 1 Kheker, vertical band of inscription, 1 Kheker, Anubis, etc.
- „ 31. 2 Khekters, Anubis, 2 Khekters, Anubis, etc.
- „ 35. (Inner chamber.) 3 Khekters, Anubis, 3 Khekters, Anubis, etc.
- „ 189. Same as 35.
- „ Q. 51. 3 pointed Khekters, Anubis, 3 pointed Khekters, Anubis, etc.

KHEKER ORNAMENT IN CONJUNCTION WITH HATHOR HEADS AND ANUBIS COUCHANT ON A PEDESTAL, WITH OR WITHOUT VERTICAL BANDS OF INSCRIPTIONS (FIGS. 8, 9).

- Tomb 41. (Shrine.) 1 Kheker, Hathor head, 1 Kheker, Anubis, 1 Kheker, Hathor head, etc.
- „ 51. 1 Kheker, Anubis, 1 Kheker, Anubis, 1 Kheker, Hathor head, 1 Kheker, Anubis, etc.
- „ 135. 3 Khekters, Hathor head, Anubis, 3 Khekters, Hathor head, Anubis, 3 Khekters, etc.
- „ 148. 3 Khekters, band of inscription, Anubis, band of inscription, Hathor head, band of inscription, 3 Khekters, etc.
- „ 157. 3 Khekters, band of inscription, Anubis, 3 Khekters, band of inscription, Hathor head, band of inscription, 3 Khekters, etc.
- „ 158. 3 Khekters, band of inscription, Hathor head, band of inscription, 3 Khekters, band of inscription, Anubis, band of inscription, etc.
- „ 159. Same as No. 158.
- „ 178. 3 Khekters, Hathor head, 3 Khekters, Anubis, 3 Khekters, Hathor head, etc.
- „ 255. Anubis, 2 bands of inscription, Hathor head, 2 bands of inscription, 2 Khekters, 2 bands of inscription, Anubis, etc.

KHEKER ORNAMENT USED IN CONJUNCTION WITH *Dads* AND *Thets*.

- Tomb 65. (Inner chamber.) 5 Khekters, 2 Dads, 2 Thets, 2 Dads, 5 Khekters, 2 Dads, etc.

## KHEKER ORNAMENT USED IN CONJUNCTION WITH HATHOR HEADS (FIG. 10).

Tomb 45. (South wall.) 3 Khekters, Hathor head, 3 Khekters, Hathor head, etc.  
 „ 58. (Inner chamber.) 2 Khekters, band of inscription, Hathor head, band of inscription, 2 Khekters, etc.  
 „ 163. 2 Khekters, band of inscription, Hathor head, 2 Khekters, band of inscription, etc.

## KHEKER ORNAMENT USED IN CONJUNCTION WITH FIGURES OF DECEASED ADORING ANUBIS.

Tomb 134. (Inner chamber.) Deceased, 2 bands of inscription, Anubis, 3 Khekters, band of inscription, deceased, etc.

## FRIEZE MADE UP OF FIGURES OF THE DECEASED ADORING ANUBIS (FIG. 11).

Tomb 16. (North wall only.) 3 bands of inscription, deceased adoring Anubis, 3 Nefer signs, Utchat eye, incense jar, Shen sign. (These symbols occupy the whole length of the wall and are therefore not repeated.)  
 „ (? 7A). Anubis, band of inscription, deceased and his wife, band of inscription, Anubis, etc.  
 „ 45. (Eastern and western walls of southern end of tomb.) Band of inscription, figure of deceased, band of inscription, Anubis, band of inscription, figure of deceased, etc.

## FRIEZE MADE UP OF SMALL FIGURES OF DECEASED AND HIS WIFE ADORING ANUBIS AND A HATHOR HEAD.

Tomb 221. Band of inscription, deceased and his wife before Anubis, band of inscription, deceased and his wife.

FRIEZE MADE UP OF *Dad* SIGNS ONLY.

Tomb 31. (Two walls in outer chamber.) 2 Dads, 2 bands of inscription, 2 Dads, etc.

## FRIEZE OF ANUBIS COUCHANT ON A PEDESTAL ALTERNATE WITH HATHOR HEADS.

Tomb 58. (Inner chamber.) Hathor head, Anubis, Hathor head, Anubis, etc.  
 „ 166. (Jamb of entrance to shrine.) Same as Tomb 58.  
 „ 149. Hathor head, 2 bands of inscription, Anubis, 2 bands of inscription, Hathor head.

FRIEZE MADE UP OF ANUBIS COUCHANT ON A PEDESTAL WITH *Dad*, *Thet* AND OTHER SIGNS.

Tomb 14. Anubis, Thet, Dad, Thet, Anubis, Thet, Dad, etc.

## FRIEZE OF HATHOR HEADS AND COLOURED CONES (FIG. 6).

Tomb 71. (Outer chamber.)

FRIEZE OF HATHOR HEADS WITH SUPPLEMENTARY *Nefer* SIGNS.

Tomb 6. (Second chamber.)

There are three tombs (Nos. 13, 166 and 184, outer chamber) in which the friezes are destroyed. The first one has only a vertical band of inscription and the front portion of an Anubis figure left of its frieze. The sole remains of the frieze in the second tomb is an Utchat eye on a Neb sign. In the third tomb it is just possible to see that Khekters in groups of three formed part of the frieze. The intervening signs or symbols between these Khekters are now entirely gone.

Numbers and names of tombs mentioned in this article :—

15. Shuroy.	65. Imisibe.	134. Thauenany.
19. Amenmōse.	71. Senmut.	135. Behnamūn.
21. User.	72. Rē.	147. Erased.
22. Wah.	75. Amunhetpesise.	161. Nakht.
31. Khons.	76. Thenuna.	166. Ramōse.
35. Bekenkhons.	77. Erased.	184. Nefermenu.
38. Zeserkarasonb.	78. Haremheb.	201. Rē.
39. Puimre.	82. Amenemhēt.	251. Amenmōse.
40. Amenhotpe or Huy.	84. Amunezeh.	254. Name lost.
42. Amenmōse.	87. Minnakht.	255. Name lost.
43. Neferronpet.	88. Pehsukher.	K. 11. Rameses III.
45. Dhōut, usurped by Dhutemheb.	89. Amenmōse.	K. 22. Amenhetep III.
48. Surere.	90. Nebamun.	Q. 1A. Setra.
55. Ramōse.	91. Erased.	Q. 42. Paraheremef.
57. Khaemhet.	93. Kenamun.	Q. 43. Setymerkhepeshef.
58. Unknown.	106. Pesiūr.	Q. 51. Aset.
64. Hekerenheh.	112. Menkheperrasonb.	Q. 52. Thyt.
	116. Erased.	Q. 55. Amenkhepeshef.

E. MACKAY.

## REVIEWS.



*Die Annalen und die zeitliche Festlegung des Alten Reiches der Ägyptischen Geschichte.*—LUDWIG BORCHARDT. 1917. 64 pp., 6 plates. (Berlin, Behrend.)

In this study of the Palermo stone, and other pieces of the similar Annals, there is certainly one solution of the problem ; but we must ask, is this the only solution ? The main idea is that the five rows of year-spaces, each of different spacing, can only rarely coincide in the divisions, and therefore the terminals of these different series can be found by continuing them up to a coinciding position. This will be seen described in ANCIENT EGYPT, 1916, pp. 116-118 ; Dr. Borchardt protests that he was already on that track before—no doubt—and the English method of 1916 had been already worked here in 1902. The verdict in 1916 was that “the irregularities prevent accurate conclusions” at any great distance. This has been ignored by Dr. Borchardt, who states the breadths of spaces to five places of figures, while his actual measures were only to three figures (11 spaces in 78.25 mm., 9 in 83.6, 11 in 83.0, 11 in 70.1, 8 in 63.5 ; and, judging by the lower four registers, the first length was 77.25 and was misread). Much more serious is the variation in the regularity of the spaces, which vary as 65 : 70, 53 : 58, 45 : 50, 57 : 62. Hence there are several solutions fairly possible for coincidences of the lines of the registers ; such as the numbers 24, 18, 22, 26, 21 ; or 81, 61, 75, 89, 71 ; or 146, 110, 135, 160, 128 (nearly Herr Borchardt’s) ; or 162, 122, 150, 178, 142. There is yet more uncertainty due to all the measures being derived from photographs. Until there is an accurate direct measurement made of every line and thickness of each of the stones, it is wasted time to try for refinements. The best determination between the various possible number of spaces is the general character of the spaces on the back, belonging to the kings of the Vth dynasty. These agree to the length which is proposed, of 146, 112, 138, 163 and 131 spaces on the front ; so although there may be various solutions, there is a strong probability in favour of the one here set out.

A source of dating which is developed here is the high Nile being recorded in the latter part of the year, when divided between two reigns. As the times of high Nile are usually between 18 September and 7 October, and never more than three weeks beyond those limits, hence that part of the year must have coincided with a few months before the New Year. This gives the most effective result in the reign of Nefer.ar.ka.ra, Vth dynasty, thus dated between 3120 and 3460 B.C., or perhaps a century further either way. Objection has been made that this writing of the high Nile in the second half of divided years was due to convenience ; but that could only be true of one case in the four which occur, the other three could equally well be written in either space. This date on the

Egyptian system—one Sothic period earlier—would be 4580–4920 B.C., or the extreme limits of 4480–5020 B.C., the first of which would just agree with Manetho's history. The result of the spacing of the Annals deduced above is also shown to be closely in accord with Manetho, and Dr. Borchardt concludes that “Manetho had really good sources, and his copyists have not altogether spoiled him.” Yet however much he rehabilitates Manetho from the Ist to the XIIth dynasty, he will have none of him from the XIIIth to the XVIIIth, but keeps to the arbitrary setting of eight contemporary lines of kings in that period, to bring it down to two centuries.

One evidence against shortening the time stated for the IVth dynasty is the prodigious amount of building quoted. Even if those kings built twice as quickly as Sahura, they would need 50 years each to get through the tasks of Sneferu, Khufu or Khafra. The mention of 955 years in the Turin Papyrus is inconclusively discussed. The uncertainty of reading (755, 955, 1755 or 1955) and the very fragmentary state of the document prevent any result being more than a guess.

An interesting matter is the recurrence of a *zet heb*. It appears in the 70th, 190th and 350th year-space. The 70 and 190 being 120 years apart give rise to taking this as the festival of a shift of Sirius by one month; and the 350th would be 400 from a hypothetical start at 120 before the 70th, and thus a festival of the shift of 100 days. But there is no sufficient explanation of the term *zet* here; and as Uazet may be thus written, it would be more regular to take these as festivals of Uazet; the last example being also side by side with Nekhebt, the parallel goddess, would bear this out.

A matter which casts a serious shadow on this work is the “doctoring” of two ivory tablets on p. 53. A second version of one tablet has the gratuitous insertion of  $\text{†}$  put in for the sake of argument, of which there is no trace on the original. A second version of another tablet has a break smoothed out, and a perfectly clear incised line obliterated along with it, in order to make out a similar hypothetical group. Neither of these proposed readings has the least ground, and to propose fictitious readings only throws a shadow on all the rest of the material.

We may say then that there is a fair case for the rendering of the Annals here put forward; but it is much less exact and certain than it is stated, and the omission of some passages would have left the remainder in a stronger position. The dating concluded from all the sources discussed is: Ist dynasty, 4186 B.C. [or 5646]; IIInd, 3938 [5398]; IIIrd, 3642 [5102]; IVth, 3430 [4890]; Vth, 3160 [4620]; VIth, 2920 [4380]; XIIth, 1995 [3455].

*Imperial University of Moscow, Egyptian Collection I.*—B. A. TURAEFF. Sq. 8vo, 84 pp., 12 plates, 10 Figs. text. Petrograd, 1917.

A melancholy interest attaches to the last works of civilisation that emerged from the welter of Russia. As the 48 heliogravures are the part easiest for reference, we note the inscribed and important pieces in order. I 3, a half-length of a king of XIIth dynasty, attributed to Amenemhat III, like the Karnak statue, a bad style from which the other statues redeem this king; also four anonymous heads. II, a gracious seated figure of a Vth dynasty priest of the Sun temple, Uzot-cher. A pair of seated figures, the woman Pernerek, larger than the man Sneferu-men, a child between them, IVth dynasty. III, a very early cross-legged figure, holding a papyrus across the knees, no name. A seated figure of

Sen-nefer, XIIIth dynasty (?). Seated figure holding a tablet with adoration to Amen, and prostration to Horakhti, by Tetares, early XVIIIth. Seated figure of Ren-onkh-em-o. IV, two boys wrestling, XIIth. Small figure of Amenhetep III from a group. Squatting figures of Asek, XXVIth (?). V, four wooden figures, not fine or inscribed. VI, cross-legged figure, papyrus on knees, XIIth. Statuette of a woman in very tight ribbed dress. Statuette of a XIIth dynasty woman inscribed on front. Statuette of Sebek-hetep, son of Mut. VII, pair of figures of Naiāy and Ast, daughter of Nefu; fine work, mid XVIIIth; amulet worn by man. Another fine pair of late XVIIIth of ...aku, naming his sons Userhet, Tu-uaā, Aāy, and At-uaah ("the hour multiplies"). VIII, three wooden statuettes of Pu, Rennāy by her daughter Ra-aā-kheper-ka-senb, and Amenhetep by the same. These last two are good examples of the transition from the early XVIIIth style. IX, Basalt torso of Hor-sā-ast under Nekhtnebef, with figure of Maot worn as an amulet. X, head, probably of Ethiopian queen, Upper half of statue of XXVIth. Squatting statue of XIXth. Head of Nekht-horheb, nose unfortunately battered, a front view is to be desired. XI, Ptolemaic headless figure of Imhetep, son of Sām and Heronkh. Naophorus kneeling. Peda-mahes, wife Thent-ua, son Horusa. Squatting figure, headless, of Horkhab XII, anonymous heads, and Roman statuette holding robe, of good work for that age. There is a full index of names; the text is entirely in Russian. The collection so far is what any dealer's shop might supply, without any selection for historic or artistic importance.

*The Magic Papyrus Salt 825, of the British Museum.*—B. A. TURAEFF. 8vo, 13 pp., 5 plates. Petrograd, 1917. A discussion and complete translation in Russian. We hope that Prof. Turaeff may survive the present disasters, and renew his contributions to this journal, which would be most welcome.

*A Brief Chronology of the Muhammedan Monuments of Egypt to A.D. 1517.*—CAPT. K. A. C. CRESWELL. 128 pp., 18 plates. (Bulletin de l'Institut Française d'Archéologie Orientale, T. xvi.)

For the work of the Arab period of Egypt this study will be an invaluable guide. The inscriptions and architecture are here viewed together, and the questions of the development of structural forms are placed on a firm foundation by the dated monuments. The buildings are noticed in historical order, with the dates A.H. and A.D. in the margin. The author states: "I have seen and examined every monument in this list (with four exceptions) in chronological order . . . in order to acquire a true historical perspective. . . . In this respect Cairo is unrivalled by any other city in Islam. What town, indeed, can show a series of monuments which, commencing in the IXth century, numbers over 220 before the year 1517 is passed?" More than half of these monuments are actually dated by an inscription. Every date of alterations and rebuilding are here collected and discussed; for instance, 11 dates for the Mosque of 'Amr, 8 dates for the Mosque of Ibn Tulun, 20 dates for El Azhar.

Though not in the usual scope of this journal, we may note points of general interest such as the use of pillars projecting as roundels on the face of walls is due to requiring bonding for a wall with a rubble core: the earliest armorial bearings on buildings are 1300 A.D., a time entirely under Central Asian domination, and the badges perhaps introduced from there; and the earliest monumental date in figure is 1321, but on coin weights figured dates are found three centuries

before. A matter of much interest, which the author does not touch on, is the close relation of style between Western Europe and Egypt; the gateways of the XIth century at Cairo might belong to France or England in almost all points; the pendentives of the XVth century show the love of short vertical lines of our perpendicular style; the illuminated Qurans of the XIVth century in colour and flow of line might be French. Each century is more like its contemporaries in the West than like the next century.

Capt. Creswell has shown what a diligent student can do in leisure hours of two or three years; what have hundreds of English officials done in ten times as long that they have been in Egypt?

*Levende og Døde i det gamle Aegypten.*—By VALDEMAR SCHMIDT. 4to. 265 pp., with 1519 figures. 90 kr., or 120 frs. 1919 (Frimodt, Copenhagen).

At last the veteran curator of Ny Carlsberg has put forth his great collection of material relating to burial in Egypt from the prehistoric to the Roman period, extracted from all publications on the subject. While of immense value to students, it will also be very useful to experts as enabling styles and details to be readily compared. The figures are very clear and legible, and each has a full description and reference to its source—which may encourage the study of Danish. Such a collective work is the more needed as the literature increases, 400 serials and publications being listed here as references. The scope includes the tomb-plans, coffins of all kinds, mummies, funeral figures and statues, and the scenes and mythology figured on the coffins. It will save many a weary search for comparisons, and will prove to be one of the most useful works of recent times.

*Ancient Survivals in Modern Africa.*—By G. A. WAINWRIGHT. 8vo. 46 pp., 10 plates. 1919 (*Bull. Soc. Sultanie de Géographie, Caire*).

These papers amplify the comparisons which were made in this Journal, 1914, pp. 115, 159. The resemblances between ancient and modern forms figured here are (1) Throwsticks, as in Monbutto. (2) Bows with reflex curve, as in Eritrea. (3) Falchion, as in Monbutto. (4) Leaf-shaped dagger of Greece, as in the Sudan. (5) Narrow leaf-shaped bronze spear-head, as in Eritrea. (6) Wide iron spear-head, as among the Baggara. (7) Barbed arrows of ancient Nubia, as on Upper White Nile. (8) Drums with cross bracing used anciently by Nubians, now in Eritrea. (9) Harp with wide bowl, and head on the top, as among the Niam-niam. (10) Lyre with diverging sides and bent top bar, as in Eritrea. (11) Head-rest, as in Eritrea, with pillar and saddle forms. (12) Revolving fan, as in Nubia. (13) Wide palm-leaf carrying basket, still identical in Egypt. (14) The coiled oval store-basket with lid, as in Nubia. (15) Sandals of palm-leaf, as in Somaliland. (16) Game trap of converging spikes, as on White Nile. (17) Double bag-bellows, as on White Nile. (18) Semicircular feather fans on long handles, as in North Cameroons. (19) Black-polished pottery, as in Central Africa. (20) Cups and bowls with a small spreading stem, as in Unyoro. Finally there are notes on the composite bows, and bows reversed when strung. Such papers as these build up the study of the descent of civilisations.

*Une Station Aurignacienne à Nag-Hamadi.*—By E. VIGNARD. 4to. 20 pp., 18 plates. 1920 (*Bull. Inst. Français d'Arch. Or. Caire*).

The station reported is on the west side of Diospolis Parva. It is claimed that the chelleo-mousterian work is only found on the plateau, and the aurignacian

site is on the low desert. The aurignacian is stated to be also the age of many pieces from about Ramleh and Khan Yunis in Palestine. But we are told "the solutrean, the magdalenian, the campignyan were unknown in Egypt." Yet the very forms here published in pl. xiv 3, 4, have been found abundantly, see *Naqada* lxxi, 31, 35, 40, 43; and these ovoid forms were never found in the graves, but only in a site with ashes on the desert. The solutrean seems well known already in the great quantity of surface flints west of the Fayum; the magdalenian flake is the type found in the prehistoric graves. Though we cannot thus accept all that is stated, we welcome these drawings of 116 flints from this site. In some final remarks on the steatopygous type, it is stated that Dr. Capitan has found it still in Tunisia.

*Bulletin of the Metropolitan Museum of Art*, June, 1920. (New York.)

This number is valuable as giving photographs of important specimens in the Museum. A diorite group of Sahura with a nome figure of Koptos; a diorite portrait sphinx of Senusert III; a basalt figure of Harbas holding an Osiris, XXVIth; a sculptor's model of a ram's head; and on the cover a charming Fayum portrait of a boy, with three lines of writing upon the dress, unfortunately not transcribed or noticed.

*The Museum*.—MARGARET TALBOT JACKSON. 8vo. 280 pp., 7 pls. Longmans, 1917.

Though this is rather a book for trustees and curators, much—or most—of it will appeal to any archaeologist. The questions of the site, buildings, fittings, and exhibiting are discussed, besides the matters about staff and students, which are so much more fully developed in America than in Europe. It is instructive to read of the new museum in Berlin, "So many mistakes have probably never been made elsewhere"; it is on an island so cannot be enlarged, and with heavy express trains past it. It is on a quicksand, requiring 200 feet depth of concrete to fill it, the digging out of which almost upset the next museum. Some usual fallacies are not cleared away by the authoress. Lighting should always be direct from sky, and not diffuse from ground glass or ceilings. Floors should be of tile, and never of slippery waxed wood. Picture galleries need dark screens placed so that the pictures can reflect them, and so avoid bright reflections. Labels should not spoil the effect by harsh contrast, a brown label with darker ink is quite clear enough. A dust-trap, with free ventilation is needful for cases, as all airtight fastenings are fallacious. Though these points are omitted, yet all curators and museum frequenters should read this book for the systematic view of management.

*Thirtieth Annual Archaeological Report*, 1918. 8vo. 131 pp. (Toronto.) This is naturally occupied with Canadian history, and pre-historic remains. A long paper by Dr. Harris deals with the ideas about a lost Atlantic continent. The undoubted civilisation of Peru and other countries is only evidence of a remote occupation of America. The real difficulty lies in the disproportion in age of any civilisation or tradition with the hundred- or thousand-fold age of any geological connection of land. The traditions are quoted from Central America and the Antilles, from Plutarch, Plato, Proclus, Diodorus; but all of these cannot cover more than 3,000 or 4,000 years at the most. The age when the migration of animals indicates a land connection is the late Eocene or early

Oligocene (Gadow, *Wanderings of Animals*), and that is a matter of at least three or four million years, probably more. It seems hopeless to look at the traditional ideas as evidence of more than local disturbances of the coasts, unless geologists can allow of a change of an entirely different order to anything now granted.

*Report upon Archaeological Research, Kyoto Imperial University.*—By K. HAMADA. 8vo. 72 pp. (Japanese), iii + 8 pp. (English), 30 plates. 1919 (Kyoto University). As archaeologists we must welcome this gratifying extension of research by Prof. Hamada; the prehistoric tombs were carefully excavated by him, the sculptures are reproduced in collotype with 5 plates in colour, and all the pottery is drawn accurately in section, giving a *corpus* of 173 types. The example given by European work has started our friends to equal it with their usual ability. Prof. Hamada has also published his travels in Italy and France, with a large number of photographs, as a popular volume, unfortunately for us entirely in his own language.

## NOTES AND NEWS.

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Mr. and Mrs. Brunton have already returned to Egypt to start on rock drilling in search of any chambers in the queen's pyramid and mastabas at Lahun. Mr. Miller and Mr. J. G. West will join the work, having obtained passages already. The rest of the party hope to obtain passages, namely Major Hynes, M. Henri Bach, Mr. Montgomerie-Neilson, and Prof. and Mrs. Petrie. It is hoped to continue the work southward from that of last season.

In Palestine the new School of Archaeology has begun work under Prof. Garstang at Ashkelon, where Minoan pottery has been found in the sea face of the mound of ruins. Unfortunately there is a great mass of mediaeval and Roman material to be removed before the more important strata are accessible.

The Egypt Exploration Society has left the great work at Abydos for the present, and Prof. Peet is to excavate at Tell el Amarna this winter.

Capt. Engelbach, R.E., has been appointed Chief Inspector for Upper Egypt, stationed at Luqsor.

Mr. Wainwright has been appointed Chief Inspector of Middle Egypt, stationed at Asyut.

It is to be regretted when societies criticise each others' affairs, as in a statement in a recent presidential address; this compels us to consider the facts. It has been remarked that the Egypt Exploration Society "is practically alone in the study of Egyptian archaeology, with the exception of the Egyptian Research Account, and the Egyptian wing of the Liverpool University, both of which perform useful functions." Looking at the last fifteen years, since the Egyptian Research Account became the British School of Archaeology in Egypt, it has published, 1918 plates, nearly all discoveries of antiquities, while the Society which it is said "is practically alone in the study of Egyptian archaeology," has published 654 plates, mostly copies of known monuments and not discoveries.



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